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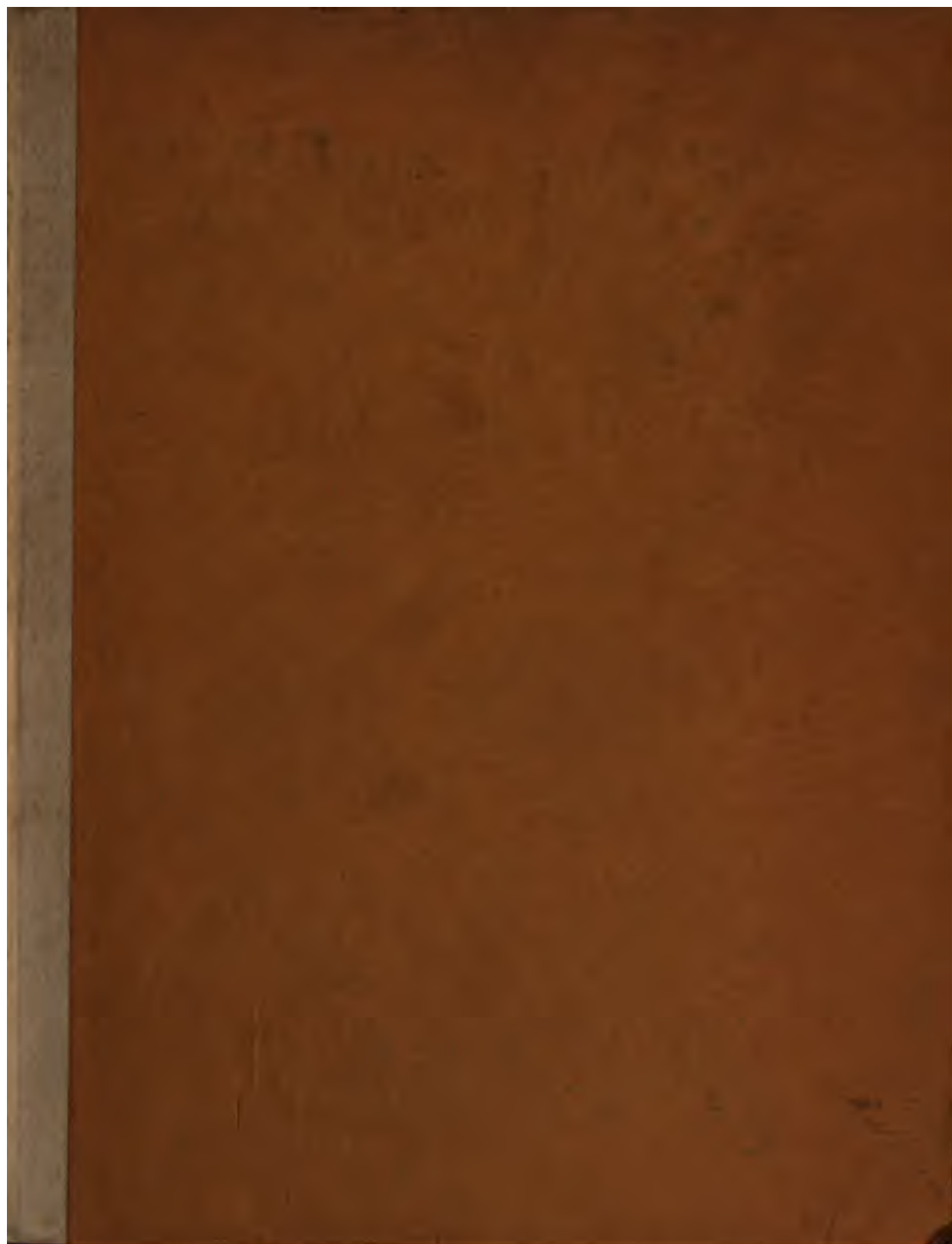
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PATERSON'S

NATIONAL BENEFIT:

A TREATISE ON

How to Raise and Grow Potatoes.

BY

MRS WM. PATERSON,

DUNDEE.



DUNDEE:

PRINTED AT THE ADVERTISER OFFICE, BANK STREET.

1872.

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A TREATISE ON

How to Propagate and Cultivate Potatoes,

WITH

USEFUL HINTS IN FARM AND DOMESTIC MANAGEMENT.

BY

MRS WILLIAM PATERSON,

WIDOW OF THE LATE WM. PATERSON,
DUNDEE.



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PRINTED AT THE ADVERTISER OFFICE, BANK STREET.

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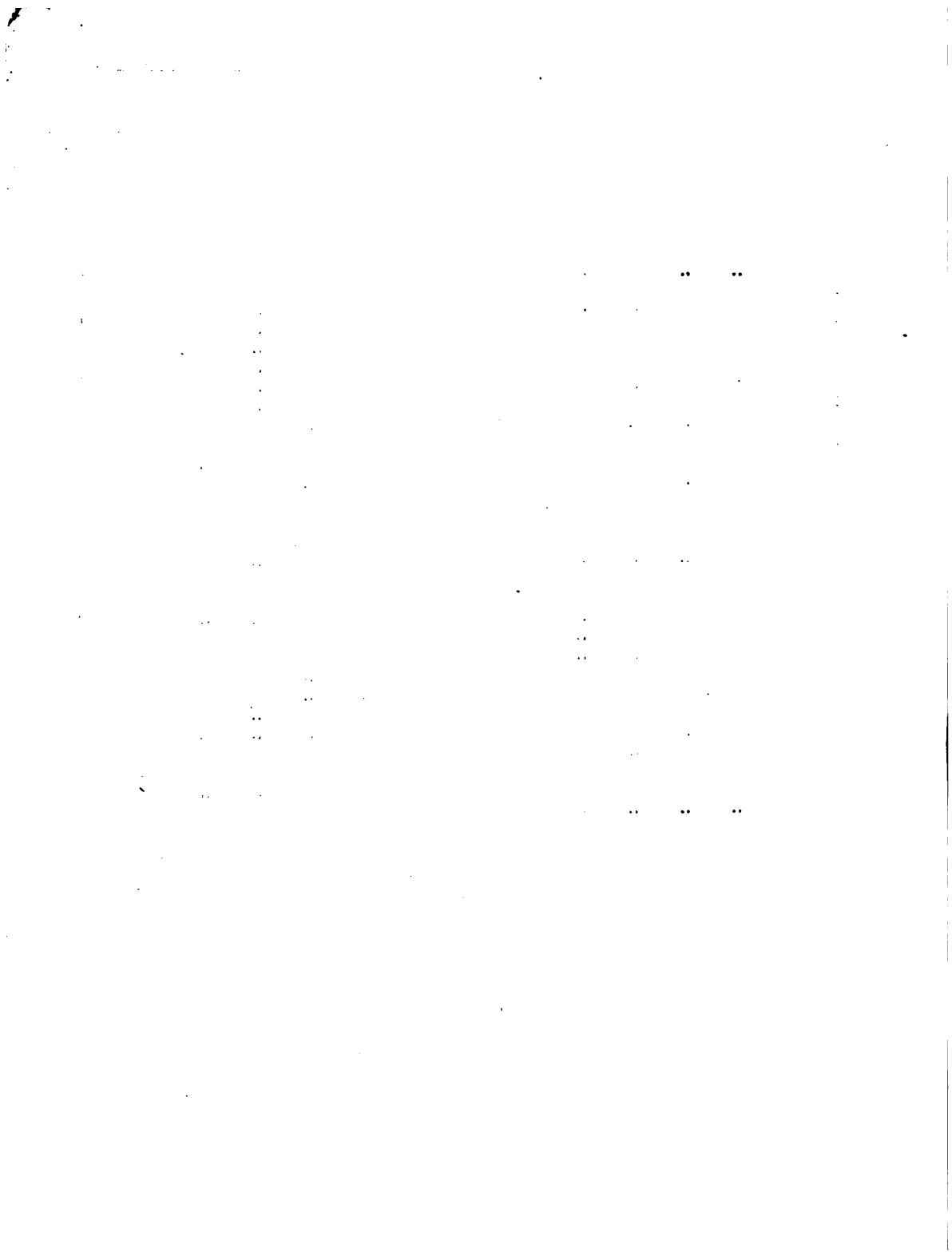
I shall esteem it a favour if you will kindly send me your order as early as possible. At the planting season so many orders arrive that it is difficult to give immediate attention to them all.

The order should be written apart from the rest of the letter, either at the beginning or the end of it.


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MRS WM. PATERSON, 38 UNION STREET, DUNDEE.



P R E F A C E.

N the past the value of the Potato as an article of food for man and beast has been greatly overlooked, otherwise more attention would have been paid to its *constitution and culture*. Disease being inherent in the plant, from repeated planting it gradually becomes worthless, unprofitable, and ultimately dies away; and now that the Potato has become a national requisite, and disease again appearing, more especially in the old varieties, where change of seed from new Seedling kinds has not been obtained, PATERSON'S system of propagation and planting must undoubtedly be adopted, viz., that of raising new kinds from the seed that is encased in the plum or apple of Potato, being the only method by which to restore vigour to and ensure the perpetuation of the plant.

The necessity of agriculturists devoting the utmost attention to the growth of an article of food such as the Potato must be obvious—especially as it is now so essential to our domestic economy and comfort in every household, from Her Most Gracious Majesty's establishment to the poorest cottar in the land, and an article which has been, and still may be, so easily and so quickly destroyed, and, in a manner, which has decidedly baffled the science of man to prevent. As I find it too arduous a task to continue to raise new varieties of Potatoes, it has caused me to compile and offer this Treatise to the public, in hopes that by that means I may overtake somewhat the pecuniary ruinous losses that have been sustained by the renewal of the Potato plant, and if possible point out those ways and means most likely to prevent that disease which has been such a scourge to our Potato crop; also to insure to the community, under Providence, a good and abundant crop of healthy Potatoes. If the culture of this esculent is neglected, and through that means it become again degenerated, if not extinct, no one can express the misery such a calamity would create.

All are aware that no other root produces such an amount of food for man and beast as an acre of Potatoes; so one may easily calculate the inestimable good this esculent does to the country, and the great importance it is to the nation. Moreover, I do not hesitate to say, had it not been for the unwearied exertions of Mr Paterson and myself, there would not now have been a Potato in the kingdom. No doubt, the great bulk of the new sorts that of late years have made their appearance have arisen from no other source than the numberless not-named varieties of Seedlings that Mr Paterson sold and gifted in 1860 to almost all the leading agriculturists throughout the world, in the hope that some good sorts would spring up from amongst them. When it is borne in mind that each new variety has to be kept separate, and this continued for years before one can judge of the success of any one variety, it will give some idea of the vast amount of expense the cultivator exposes himself to.

It has been said that the man who makes two blades of grass grow where only one grew before is a benefactor to his country; but Paterson has done more than that. Regardless of cost, at the almost ruinous loss of £6000 sterling, his aim was attained, and the Potato once more restored to its healthy state from the dead rot which in 1846 threatened to extirpate it from the face of the earth. *No one can challenge the truth of this*; and I make no doubt that, were the importance of this matter properly represented to the British, American, and other

foreign Governments, it might be taken notice of, and might yet be rewarded in some way or other. Doubtless awards have been given for doings of less moment.

As is generally known, I assisted Mr Paterson in his arduous work, and the system of preparing the small seed is originally an invention of my own, and though it may be said to be a small matter, it is, nevertheless, gigantic, and worthy of notice and recompense.

When agriculturists think of all this, and recollect the high prices they have realised for Potatoes since the introduction of Paterson's far-famed Seedlings, and for the incalculable value and benefit they have proved to the nation, I have every confidence that they will aid and assist me in my scheme, as I have every confidence that this Treatise will add one valuable link to the chain of agricultural knowledge and domestic usefulness.

It was only towards the end of the Seventeenth century and the commencement of the Eighteenth that the Potato began to be an important field crop; yet from that time, and ever since, it has become a most valuable auxiliary to Wheat as an article of food. Fickle as the Potato is, and subject to great fluctuations at the best of times, yet the production is comparatively easy, and the best of seed is always attainable, and the poorest peasant may cultivate enough for himself and family. Consequently, there is certainly a relation existing between lasting prosperity and the amount of dependence of any nation on the Potato crop as an article of food, leaving out altogether what is used for feeding purposes.

It was about the year 1824 that disease in the Potato seems first to have attracted the notice of agriculturists, more particularly in the early varieties—a disease termed “Curl,” which quite stunted the haulm and tuber. Since then Potatoes have been liable to disease of one shape or another—such as rust on the plant, soft and dry rot, decay after storing, and in 1844 it was almost impossible to find a regular briard, and whole fields were a total blank through these causes. In 1846 we had the visitation of the fatal blight, which destroyed nearly the whole crops in this country, and which since then has annually manifested itself to a greater or less extent. Mr Paterson, at his own expense, acted in conjunction with the British Government officials who were commissioned to enquire into the cause of the epidemic, and, if possible, to find out an antidote. Various were the opinions formed, and numerous the experiments that were tried in order to attain that end. Professor Johnston was of opinion that the disease was caused by fungi—others that it was an insect. Many other conjectures were put forth, but the remedy was not discovered.

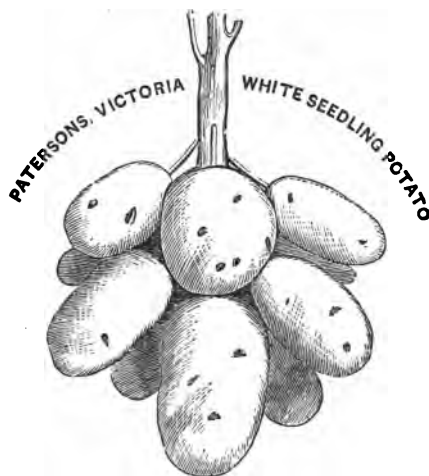
Mr Paterson's conviction regarding Potato blight was that there was no remedial cure for it, being partly caused by atmospheric action on the plant, it having the seeds of disease within itself, ready to be developed under favourable circumstances; and that it was only destined to serve its generation the same as animal life, and that, without a constant and regular successive renewal from the small seed that is encased in the plum or apple of the Potato, they will as before die out. He undoubtedly carried out that scheme most successfully, and the fruits of his labours are in every country and every clime. Any further comment from me would be like throwing water into the sea, thinking to fill it.

To show the value of the Potato in England, there are 66 persons to each acre of Potatoes; in France there are 13; and in Ireland 5½. The extent to which the Potato is cultivated in different parts of the United Kingdom will be shown in the following table:—

England,	...	...	357,010 Acres Yearly.
Wales,	...	...	49,100 do.
Scotland,	...	...	279,400 do.
Ireland,	...	...	1,046,312 do.

Take the quantity sown in Great Britain at 585,000 acres, and assuming the production at three tons per acre, that will give a total of 1,775,000 tons, or 4,000,000,000 lbs. But 4 lbs. of Potatoes, at least, are required to give the nutriment of 1 lb. of Wheat, therefore, if we take the fourth, that will be equivalent to 1,000,000,000 lbs., or less than 0·12 lb. of Wheat per head per day. The proportion in Ireland is much more. There the quantity produced is estimated at upwards of 4,000,000 tons, or nearly 9,000,000,000 lbs., and in the same proportion of four to one, will give 2,250,000,000 lbs. of Wheat, or more than twice the quantity produced in Great Britain, with little more than one-fifth of the population, or in the proportion of 1·12 lbs. per head per day.

Before I conclude, I must remind my friends and supporters that I am not a practical farmer—although a farmer's daughter—and that I have principally gained my experience in the cultivation of the Potato plant by assisting my late husband in his arduous labours in the raising and propagating of the Potato plant; and although I have compiled these remarks on their culture from my own experience, I do not presume to uphold them as a complete guide to agriculturists. Far from it; but simply in the hope that they will add one link to the chain of agricultural knowledge and domestic economy. I would ask agriculturists of experience and knowledge what the consequences would be if blight in the Potato were again to sweep the land, and as before make them worthless. I leave my readers to judge what would be the result. It is to be feared another Mr Paterson would not appear for their restoration.





PRIZE MEDAL

FOR

PATERSON'S BOVINIA OR CATTLE-FEEDER POTATO.

(From the Dundee Advertiser, 7th October 1870.)

PATERSON'S SEEDLING POTATOES—THE SILVER MEDAL AWARDED BY THE MANCHESTER SOCIETY.—The Secretary of the Manchester and Liverpool Agricultural Society, in forwarding Mrs Paterson a silver medal awarded to her in recognition of and her husband's services in raising new varieties of Potatoes, says :—I have much pleasure in forwarding you the silver medal awarded you at our late show at Wigan, for the splendid collection of Seedling Potatoes you exhibited there, and sincerely hope that this small recognition of your efforts and those of your late husband to raise new and good varieties of Potatoes may be an encouragement to perseverance in what is in some degree a national necessity. Your "Bovina" excited surprise and admiration, as also did your "Victoria," the new "Albert," and "Paterson's Blue." I have myself raised a splendid crop of Victoria, and have had a few roots of the Bovinia growing, the crop of which convinces me its cultivation must become general by and bye, and be a profitable crop, and especially on land sick of turnips. Hoping you will have no cause to regret your visit to Wigan.—Yours most respectfully,

THOMAS RIGBY, *Secretary.*



THE above represents the *SILVER MEDAL* awarded to WM. PATERSON & SON in 1865 at the OLDHAM EXHIBITION of the MANCHESTER AND LIVERPOOL AGRICULTURAL SOCIETY for a Selection of their

SEEDLING POTATOES,

and which were spoken of at the time as being a Sample of Seed raised from the Flum or Apple of the Potato, the like of which for excellence of Form, Size, and Quality had never before been exhibited to the Public at any Exhibition. MR T. PIERPOINT of Warrington, as WM. PATERSON & SON'S Agent at the time, was the person who exhibited them on his Stall.



THE above is the "ERFURT" MEDAL, obtained with the DIPLOMA OF HONOUR, also in 1865, for a Collection of PATERSON'S SEEDLINGS, shown by MESSRS SHIEBLER & SONS, Seedsmen and Florists, Celle, Hanover—MR WM. PATERSON'S Agents at that time.

The following is a Report from the same parties:—

From J. L. SCHIEBLER & SOHN, Celle, Hanover, Kingdom of Prussia, 8th October 1, 1865.

Your Seedling Potatoes have done very well in this country, if we compare your Seedlings with the different sorts we grow (about 25 kinds without yours). Victoria is, for our soil and climate, decidedly the best and heaviest cropper of all. Then follows Paterson's Regent (a very fine sort); do. Early; do. Blue; afterwards Napoleon, Paterson's Red, Blue Kidney, and Seedling Rock. They have yielded 7½ to 8 tons per imperial acre, against 5 tons of the best standard kinds grown in these countries. Paterson's Victoria also yielded 14 to 21 per cent. of farina against 12 per cent. in the Regent, which is the standard potato here. This proves the richness and value of your Seedlings over all others.

Your Victoria has been spoken of in very favourable terms at the meeting of the Berlin Agricultural Society, and was published in the "Wochenschrift" of the Society.

The Reports we have from many parts of Great Britain and elsewhere speak equally well of our Seedlings, more especially the Victoria, which yielded 21 per cent. against 12 of farina in the Regent—thus showing the richness of it over all other Potatoes.



PATERSON'S TESTIMONIAL.

COMPLIMENTARY DINNER TO THE MESSRS PATERSON.

At a Public Dinner given to Messrs Wm. and GEO. PATERSON, the above Epergne, along with the Claret Jug, was presented to

MR WILLIAM PATERSON,


(to descend to Mr GEO. PATERSON should he survive his father), in the name of the Subscribers—Landed Proprietors, Farmers, Potato Merchants, and other Friends—as a mark of their respect for him, and also of their admiration of his successful exertions during the past forty years to improve and renew the Potato plant.

DUNDEE, 10th November 1865.

Mr Langlands, in proposing success to "Paterson's Seedlings," said he was one of the first who understood and appreciated Mr Paterson's endeavours to improve the Potato plant. For a long time Paterson and his Potatoes were a standing joke among the farmers. I thought the thing a joke, I frankly acknowledge; but Mr Paterson persevered. Wherever there was a piece of bad land there Paterson set down his Potatoes. There was one field in particular, in my immediate neighbourhood, which I noticed every time I went to Dundee. I saw there was an appearance of Potatoes growing and that was all, and I thought that little could come out of that field. At the end of the season no one seemed to be coming to lift them, and I imagined that it had been considered they were not worth looking after. But, one evening when I was returning home, I saw dimly through the mist several figures in the field, and they seemed

to be digging. On coming up I noticed my friend Mr Paterson amid a corps of Irish labourers, and I said to him, "Hilloa, what are you doing there? You can get nothing in that field." He replied, "What do you say, man? Just come and see this?" Well, I thought I would just stop, and on going into the field I saw him thrust his hand into several shaws and bring out Potatoes which, for size and promising appearance, certainly astonished me. The crop was abundant, and from that day to this I have been satisfied that Paterson's Seedlings are no joke; and though many a farmer was, like myself, sceptical about them, I think every one has become a convert like myself. Having, as I said, been converted, I have been growing Paterson's Seedlings ever since, and I refrain from telling you the yield of some of my crops for fear that you would not believe me. He concluded by again proposing success to Paterson's Seedlings.

HISTORY OF THE POTATO.

S we are so familiar with the Potato in its cultivated state, it is interesting to become somewhat acquainted with its appearance and origin in its native localities, especially as late events have shown us that we may have again to resort to the original stock, "The Wild Potato, from central Chili," on the highest mountains, where a drop of rain does not fall for more than six months; or from the Chenos Archipelago, where they grow on the sandy soil by the seaside, and thrive as far south as lat. 50°.

The Potato belongs to the order *Pentandria Monogynua* of Linnaeus; the family *Solanaceae* of Jussieu; genus *Solanum* of the natural system of Lindley. The name is given by Pliny, but the derivation is uncertain; some derive it from *Sol*, the sun; others say it is *Subatum*, from *Sus*, being serviceable in the disorders of swine; and others from *Solor*, to comfort, from its soothing narcotic effects. All these conjectures are, however, improbable.

Solanum tuberosum, the common Potato, has roots bearing Potatoes which vary very much in the colour of the leaves, flowers, and shape of the tubers.

There is a sweet kind of Potato, originally a native of Peru, which was supposed to possess an invigorating property. Confectioners and sugar boilers in olden times converted them into many delicious preserves and nutritious sweetmeats: kissing comfits were said to be made of them in the days of Shakespeare. The common Potatoes now in general use are not so large nor yet so long; some of them are round, some pine apple shaped, and some flat. The juice which may be separated from them is sweet tasted, which can be converted into a spirit. Various kinds of gum are also made. The acids they contain are tartaric and phosphoric, and now they are extensively used in making Farina, which may be converted into a substance having the appearance of Tapioca, &c., &c.

"Potatoes lose from 1 to 2½ per cent. in the process of boiling. The meal is insoluble even in boiling water, though Potato starch forms a transparent solution with hot water. Thus it appears, by boiling, the albumen, fibrous matter, and starch combine together and form an insoluble compound."

Simple as the process seems, it is not every cook who can boil a Potato well.

The common Potato first appeared in Spain in the early part of the Sixteenth century; from thence to Italy, then to Flanders, and from thence through Germany on to Austria.

It has been ascertained from good authority that Sir Francis Drake was the first that introduced them into Europe in 1573; but this has been doubted, and it has been ascribed to Sir John Hawkins in 1563; but, for certain, they were brought from Virginia into England in 1585 by Sir Walter Raleigh; but it is affirmed that the Spaniards had established them in Europe before that time.

"This palladium against famine." When this phrase was used I question if it was thought that the object of the eulogy would itself be the cause of famine or consternation.

Potatoes were not known in Ireland until 1610, and not cultivated in England until 1683, and even then they were confined to gardens, and in some instances they made use of the plums in those days; but not till the year 1683 did they appear in Scotland, and then they were only a dainty at the table of the wealthy, being only grown in gentlemen's gardens. They were a white, round Potato, called the American Early.

Thomas Prentice, a day labourer, who visited Kilsyth in 1728, gets the credit of first planting Potatoes in that quarter in the open fields, and his success was such that every farmer and every cottager strove to follow his example, and succeeded most wondrously.

By 1763 farmers did still more to extend their cultivation by means of the ploughs which were introduced into the country at that time by an itinerant ploughmaker of the name of Lambas; however, from a dislike to improvement in those days, they went totally out of use. In 1746, Lord Kaimes, who took a great interest in the improvement of husbandry, introduced another plough for the purpose of furring up Turnips and Potatoes, made on a better principle by a James Small, who from the hints he got and his own genius from time to time improved it much, and that same plough is still in use in many parts of Scotland. The improved system in the practice of hus-

bandry must be attributed to ploughing, drilling crops, and horse or grubber cleaning, especially in Turnip and Potato culture.

Potatoes were first known in the Dundee district about the year 1750; the then Lord Gray, being impelled by a spirit of patriotism, as well as being a keen agriculturist, had a field planted with the wonderful new-comers on the farm of "Gray." His Lordship, much annoyed at the depredations of the crows on this his special field, asked a servant, who was addicted to making slips of the tongue, "John, how is it that the crows dig up the Potatoes that way?" John answered, "Ou, they just put in their fingers, as ye, my Lord, wad dae yer neb."

The first shipment of Potatoes sent from Scotland to London was shipped by Mr David Brown, my grandfather, at Kingsbarns, on the Fife coast, in 1790; his returns were about 30s. per ton, and he thought he had made a fortune off his Potatoes. At that time Potato blight was not known.

After this, agriculturists gradually began to calculate on the importance of a Potato crop. Year after year they increased in quantity of various kinds, and it was not until the year 1826 that the Potato blight began to show itself in Early varieties in gardens, which ultimately, independent of all that had been done to ward off the epidemic, every year increased. At that time, Mr Paterson's attention was especially called to the Potato plant; he observed that every variety was degenerating and ultimately becoming worthless; this he attributed to repeated planting from old stocks. So strongly did this impress him, that if new methods of propagating the plant with an infusion of new blood were not adopted it would become extinct, that he resolved to make experiments with that end in view. But, before adopting such an undertaking, he tried to restore the old plant by every means that human skill could devise, yet the constitution of the old plant could not be brought to its original strength.

It was not till 1845, when the scourge swept over all our land, that the general public became alarmed. It was then that Dr Johnson was commissioned by the British Government to inquire into the cause of the epidemic, and if possible to find out an antidote. He, along with Sir John Richardson, called upon Mr Paterson at the time he was experimenting with the Archangel Potatoes, and they were much struck with the result. Various and extensive were the experiments made at that time by these gentlemen in order to attain the

end in view; and as to the causes, many were the conjectures, but no data could be found to arrest the progress of the disease.

Dr Johnson was of opinion that the blight was caused by an insect; however, as far as I could learn, his researches fell dead from the press, and it was not till 1846 that the fate of the Potato was decided. Then Mr Paterson determined to carry out his original idea of raising and improving new Potatoes from the small seed encased in the plum or apple of the Potato. His conviction regarding the Potato disease was that there was no direct cure for it; that it is partly owing to atmospheric action on the plant, it having the seeds of disease within itself, ready to be developed under favourable circumstances, and that it would always be more or less subject to it. Then we had only a few of the old standard field varieties left.

Before this period they flowered and bore plums or seed, but they gradually became so weakened in constitution that they bore neither.

About 1848, Mr Paterson introduced the Rock Potato, in hopes that some good results would be derived from its importation. At first it produced the heaviest of crops, but from repeated planting it became so weakened that farmers in a great measure left off planting them. Now, had we depended on these few varieties of Potatoes, what would have been the result to man, leaving out the brute creation altogether, had blight again swept over the land? As almost every nation plant Potatoes, and every class of the community eat them—from the Queen on the throne to the poorest beggar—it would cause famine and misery throughout the world which would not be easily overtaken, as there is not grown in any one season sufficient grain to supply the want that might be created by a Potato blight. The year after the great and fatal blight, wheat rose in price from 40s. to 100s. per qr. and upwards in less than nine months.

In 1853, Mr Paterson commenced his ruinous and arduous task. By this time the initial difficulty was very great, as Potatoes, from repeated planting, had become so weakened in constitution that they had, as I said before, almost ceased to flower. Still, regardless of cost, he imported Potatoes from every direction, and had them planted in this district on a piece of newly taken in land, where the atmosphere was damp. Most of them produced flowers and apples, but only a few of them ripened, as most of the apples dropped off, not coming to maturity. However, the

experiment was successful, and from those few small insignificant looking little things—yet how important—has been produced all those new varieties of Paterson's Seedlings which have been given out to the world ever since the year 1860, and which have been grown and tested both in field and garden by the most eminent agriculturists and growers in almost all parts of the Kingdom, on the Continent, America, Australia, and New Zealand. And the universal testimony regarding them was that they were quite new in colour and habit, heavy croppers, and being invigorated with new blood, possessing a constitution vigorous enough to enable them to combat successfully both atmospheric influences, insectivorous adversaries, and diseases inherent in the plant, they are less liable to the attacks of disease, and may safely be termed the National Benefit. But, for all that has been done, unless a regular renewal of the Potato is kept up, disease being inherent in the plant, it will as before die out.

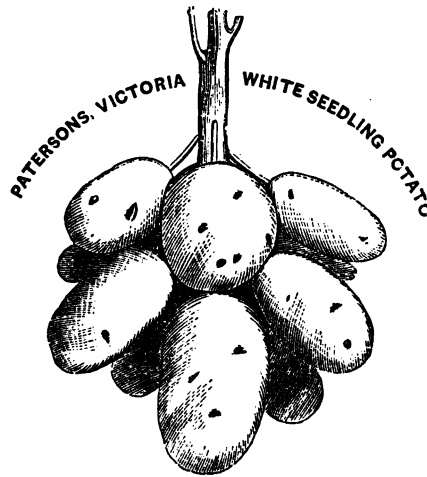
From Paterson's Victoria seed can be obtained any year, which overtakes one of the great difficulties Mr Paterson had to contend with.

Mr Paterson's son, George, who assisted him in his arduous work, was cut off in the

morning of his days by typhus fever, on the 1st January 1866.

On the 3d January 1870, Mr W. Paterson departed this life. The readers of this treatise need no biography of him. I may say all the world acknowledged that he served his day and generation. With an untiring and unyielding purpose he plodded on till he succeeded in his ideas of benefitting his fellow-men; and before his death he had the satisfaction of knowing that he had done good with no sparing hand, and that his memory would survive long after he was "sleeping beneath the ash trees' shade." I may add that for many years before his death he was widely known as the most successful Potato raiser of his day, and owned the finest fruit shop in the kingdom. Since these events, I have continued to carry out his arrangements, but the task is by far too arduous and expensive for me to continue. I must only content myself by continuing to give out what has been intrusted to my care from unfortunate events. Mr Paterson acquired his agricultural knowledge by going through the practical part of it under the tuition of his father, who not only grew a large breadth of Potatoes in the field, but was the most extensive cultivator of fine fruits and vegetables in the Dundee district.





PATERSON'S REPORT OF HIS FAMED SEEDLING POTATOES.

1 UNION STREET, DUNDEE, March 30, 1869.

Mr WILLIAM PATERSON thanks the Subscribers to the Testimonial to compensate him for the heavy losses he has sustained in his endeavours to propagate new and superior varieties of Potatoes; and would respectfully call the attention of the Subscribers to the following Letter and Report in order to show them that their kindness has not been unmerited.

Copy Letter from F. N. Menzies, Esq., Secretary of the Highland and Agricultural Society of Scotland.

HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND,
EDINBURGH, 4th March 1869.

"DEAR SIR,—I am happy to inform you that the Directors, at their Meeting yesterday, resolved to grant you the Society's Gold Medal for your Report on 'Experiments in Propagating New and Superior Varieties of the Potato Plant.'—I am, yours faithfully,

"F. N. MENZIES.

"WILLIAM PATERSON, Esq., 1 Union Street, Dundee."

REPORT.

THE following is a copy of the Report by Mr Wm. Paterson, Dundee, on the Propagation of New and Superior Varieties of Potatoes, for which he received the Gold Medal of the Highland and Agricultural Society of Scotland :—

Forty years ago I had the management and superintendence of the grounds of my late father, who not only grew a large breadth of Potatoes in the field, but was the most extensive cultivator of fruits and vegetables,

from the commonest to the finest sorts, in this neighbourhood. At that time my attention was specially directed to the Potato plant. It struck me (more especially in regard to the earlier varieties) that decay and weakening of constitution were discernible even then.

These finer varieties we grew in warm borders. I observed that they very rapidly degenerated, and ultimately became quite worthless; this I attributed to repeated planting from the same stock, without an in-

fusion of new blood. So strongly did this impress me, that I had a firm conviction that unless new methods of propagating the plant were resorted to it would soon altogether disappear, to the incalculable loss of the country at large.

Year after year I observed that all varieties, both in garden and field, continued to degenerate, and get weaker in the constitution. Every preventive and restorative I could conceive I tried, in order to regenerate the plant, but with little satisfaction.

I then formed an opinion, from which I have never deviated or had cause to depart from, that the Potato plant was only designed to serve its generation, the same as in animal life, and that without a constant and successive renewal, from the plum or apple of potato, it was quite possible that this most valuable esculent might be lost altogether.

Before arriving at this conviction, I planted year after year all the varieties I could obtain from the coldest and warmest countries, used all the manures I could think of, tried by different processes of planting and lifting, by preparing the ground and seed, to arrive at some satisfactory result.

During the growing season I have microscopically examined the growth of the plant at all its stages, and I have remained in the field in the month of July (the growing season), and observed the disease overtake the plant with virulence during sultry weather, having the appearance of rust in the sprout in some cases, and in other cases in the plant. The black spot appeared on the leaf as if burned by a drop of vitriol, the other side of the leaf affected became quite mouldy, in the course of twenty-four hours the fungi appeared, which I considered a secondary cause.

The Potatoes I had brought from Archangel I planted with gas ammonia, &c., which caused them to grow much stronger than any of the other sorts. The Potatoes being brought from a cold climate, I considered that they would resist the disease better than any of our home varieties, but to my dismay they were the first to become affected, and rendered almost useless.

When Dr Johnson was commissioned by our Government to inquire into the cause of the epidemic, and to find if possible an antidote, he, along with Sir John Richardson, called upon me at the time of finishing my experiment with the Archangel Potatoes, and were much struck with the result of it. As Dr Johnson stated, he had not seen disease that season before, and he had been over England and

Ireland before coming to me. Various and extensive experiments were made at that time by me and many scientific gentlemen in order to attain the end in view. As to the cause many conjectures were put forth, but no data could ever be arrived at to arrest its progress.

Dr Johnson was of opinion that the blight was caused by an insect, others that it was owing to fungi. My own conviction regarding the Potato blight is that there is no direct cure for it, but that it is entirely owing to atmospheric action in the plant, it having the seed of disease within itself, and that it will be always more or less subject to it. From this time (viz., 1853) I determined on carrying out my original idea of raising and improving seedling varieties from the plum or apple of vigorous and healthy tubers. The initial difficulty was very great. Potatoes in this country had almost ceased to flower, and at considerable expense I imported them from England, the Cape of Good Hope, Australia, America, and Calcutta, from which, as well as from our own standard kinds, I selected the healthiest tubers, and planted them in a field of newly taken-in land, with reed manure, by the side of a stream, where the atmosphere was damp. All produced flowers, and most of them apples. The experiment was successful, and from the seed or apple then produced those new and improved varieties which I have now given out to the public, and which are acknowledged to be, at home and abroad, of so much benefit to the community. I now beg leave to lay before your Honours the method adopted by me in obtaining and preparing the seed from the plum or apple, which was as follows:—

When the apple was ripe I gathered and stored them in boxes until the plums in a manner became decayed, then bruised them among water, and filtered them through a fine sieve, so as to allow the seed to be separated from the pulp. I again had the seed put through a finer sieve, so as to leave it as clean as possible. I then had it dried on a cloth in a dry atmosphere, and kept it safely over the winter.

I then had it sown in March 1854, among properly-prepared mould, in small boxes placed in a greenhouse. After the seed braided, so that I could distinguish the most healthy plants, I picked them out in the month of May, and re-planted them in an early border in a garden manured with vegetable mould. I paid every attention until lifting time, when I found most of the tubers not larger than peas. I then placed them in flower-pots, and

clamped them up, keeping the produce of each plant separate, in a well-sheltered garden, so as to protect them from frost.

In March 1855 I again re-planted the tubers contained in each pot in separate rows in a garden, a little more exposed than where I had them the former year, and at lifting time I found them of various sizes, the largest not bigger (except the early Red Kidney) than good seed size. But I could now more easily distinguish the different varieties, and I placed the produce of each kind in separate boxes, and had them clamped up again in the ordinary way for the winter.

In March 1856 I planted the contents of each box (cutting the large tubers in two) in a well-sheltered field on the farm of Dronly, near Dundee, still keeping each variety separate. At lifting time two of the varieties had almost attained marketable size; but still sound data cannot be ascertained until after years of continuous cultivation.

My aim was to discover new varieties of plants possessing constitutions vigorous enough to enable them to combat successfully both atmospheric and insectivorous adversaries.

In regard to many of the varieties cultivated by me, and which were found to be magnificent croppers, and of surpassing quality, my hopes were frustrated. After years of time, and after great expenditure, outlay, and trouble, they had to be disbanded on account of weakness of constitution, being unable to withstand the ravages of disease.

In 1860 I had about a hundred tons, from which I selected as many varieties out of the stock as I thought I could undertake to cultivate and give out true to name.

I threw the remainder all together, and both sold and gifted them to English and Scotch growers, in hopes that some good varieties would be selected from them, as many of them were of handsome form, both oval and round-shaped, containing an extraordinary amount of farinaceous matter, and flesh as white as milk. I am satisfied this has been the case, from the appearance of a great many varieties of altogether new kinds in the country besides my own named sorts.

From 1860 to 1863 (the stock at this time having increased to about 1000 tons) I planted them on various farms in Forfarshire and Perthshire. In this year we gave out about twenty distinct varieties, oval and round-shaped, also sixteen distinct varieties of Kidneys, all of which I have found to be heavy croppers, good quality, fine form, rough skinned, and all of strong constitution, yield-

ing, in many cases, from 12 to 20 tons per acre, and 20 per cent. farina, against 12 per cent. of the Regent kind, which was tested by Messrs Scheibler & Son, Celle, seedsmen to the King of Hanover. My Victoria, which keeps in perfect order for the table for twelve months, was the richest in farina.

I planted one field (strong clay soil) on the farm of Kinnaird, Carse of Gowrie. At lifting time, when my Victorias, Blues, and Reds were driven off the field, they looked like well-dressed London ware, weight per acre nearly double that of the other sorts, and no disease amongst them; while the Rocks, late and early Regents, were quite black in the carts, and half gone with original disease. These varieties, along with many of the other sorts, have withstood the disease equally well up to the present year, which many growers have testified.

I can refer to Mr Sturrock, farmer, Burnhead, Auchterhouse; Mr Bell, farmer, Leoch; and many others who grew the varieties referred to last year, and found them handsome large tubers, heavy crop, and almost entirely free from second growth, while Rocks and Regents, under the same cultivation, were almost worthless in many cases for human food, by reason of second growth. From reports we have had from every quarter at home and abroad (of which we send you a few), there can be no doubt of the superiority of the new varieties, and of the incalculable value they have proved to the community at large.

When it is borne in mind that each variety has to be kept entirely separate, and thus continued for years, it will give some idea of the vast amount of care, trouble, and expense to which the cultivator exposes himself ere he is enabled to judge of the success or want of success of his experiment, even in regard to any single variety; and when these varieties are very numerous, as was the case in my experiment, your honourable body may very well conceive that the trouble and anxiety I entailed upon myself was (comparatively speaking) enormous.

Still, regardless of cost, the benefit to society has been attained at very considerable pecuniary loss to myself—I might say, in fact, almost ruinous.

Should my system of propagation be carried out hereafter, I would recommend that it be done by Government, or some public body, as it is an expedient far too costly for an individual in ordinary circumstances, even although Potato plums are now to be had in almost any district from my seedlings.

PATERSON'S "BOVINIA," OR CATTLE-FEEDER POTATO.

At the Monthly Meeting of the Highland and Agricultural Society, held in Edinburgh on 2d February 1870, Mr Menzies stated that, owing to the recent death of Mr Paterson, 38 Union Street, Dundee, to whom the Society awarded the Gold Medal last year for a report on propagating new varieties of Potatoes, he had been obliged to send the report to press in the Transactions before he had received from Mrs Paterson the following particulars regarding the Bovinia Potato. Mrs Paterson states that it is Mr Paterson's own statement, but had not been included in the prize report:— "The 'Bovina,' or Cattle-Feeder Potato, is the most valuable and most extraordinary of all my productions. It was raised from seed in 1864, and must be a great boon to the nation. It contains a large amount of farinaceous matter. The enormous quantity of 20 tons per acre can be grown on land

where finger-and-toe destroy the turnips, also on land where mangold cannot be grown profitably. With extra culture 40 tons per acre have been grown, and many of the tubers weigh from 4 lbs. to 6 lbs. weight. No doubt it is the heaviest cropping Potato known. It also keeps in good condition for twelve months, and is excellent for table use. Some care requires to be taken after lifting the 'Bovina,' as well as all other Potatoes. After it is lifted out of the ground and put in the pits or clamps, it should be allowed to remain well covered with dry straw and a slight coating of earth, till such time as they are so far dried, before covering up for the winter. The length of time required for drying will greatly depend on the weather. The reason that particular care is required in storing the 'Bovina' is on account of the largeness of the tubers."—
From the Dundee Advertiser of 4th February.

POTATO RAISING FROM SMALL SEED.

WHEN Mr Paterson commenced his experiments of Potato raising, the initial difficulty was very great, as Potatoes in this country had become so diseased and weakened in constitution by repeated planting that they had almost ceased to flower, and bore scarcely any plums; but that difficulty has been comparatively overcome, as nearly all Paterson's Seedlings have a profusion of flowers and extraordinary quantities of plums.

The seed from these plums being healthy, if the growing is strictly attended to, there will be a good crop the first year of Potatoes perhaps the size of marbles, some may be larger and some smaller. When Mr Paterson first grew them they were not larger than peas, but the seed has now got stronger.

Potato apples must be gathered when well ripened. They will fall off the haulms; those that fall off of their own accord always make the best seed. Gather and put them into any water-tight vessel; have them well bruised, and allow them to remain till the glutinous matter becomes decomposed. After that bruise them down in a large quantity of water, then filter through a sieve, so as to separate the seed from the pulp. Again have the seed put into a sieve, small enough to allow the

water only to pass through, leaving the seed in the sieve. When properly free from the gum, dry it on a thin cloth in a dry atmosphere. Being perfectly clean and dry, you can then easily store it till the spring.


Sow in March in a properly prepared bed or in boxes in a greenhouse. Great care must be taken to keep the mould in equal moisture and temperature. When the plants are a few inches high, which will be in about a month, have them picked out, with plenty of earth at each root, and plant them in an early border, properly prepared with vegetable mould, or with lime one-fourth, wood ash one-fourth, decayed leaf mould one-half, all mixed together. Lime will prevent destruction by worms, wood ash will improve the skin and growth of the Potato, and the leaf mould will serve as a nutritious manure. This manure should be scattered on the surface of the bed—which should slope to the south—about two inches thick, and then dug in. But the quantity of manure required will greatly depend on the former state of the bed.

The plants should be planted, so as not to choke the young plant, say twelve inches apart. Water a little, and just continue their culture the same as other Potatoes. When

ready for lifting, which you will learn by the haulms getting yellow and falling, they may then be forked up. Those that are ripened by the middle of June may be termed "First Early," whether Kidneys or Round; those that ripen about July, "Second Earlies;" and those later in the season may be termed "Late." Keep the produce of each plant by itself till the next spring.

In the following spring plant out in drills, taking care to keep each kind by itself, and so continue till you get quantity and quality. It will be years before you attain that point, but go on and prosper. Those with a favourable report in all points may then be brought out as new varieties.

PREPARATION OF DUNG.

 S dung in all cases acts more quickly on young plants when it is well prepared, exasperation is not necessary in planting; it is quite enough if it is in such a state as to be easily covered up. As Potatoes possess a spreading root, they require a uniform manuring, not an instantaneous supply of soluble matter. As the esculent is produced during the latter part of the growth of the plant, consequently it requires the greatest azote at the latter period of the development of the tubers, as they require more of that substance than the leaves. In an economical point of view, the best manure for Potato planting is that which contains plenty of azote, but not to decompose too quickly.

The intrinsic value of a Potato is in being neither too large nor too small, the skin rough, flesh white. The eyes should be even, and not numerous or deeply seated.

White Potatoes are generally fit for use when lifted, but coloured Potatoes are better to be stored. Paterson's new Seedlings, although coloured skinned, either late or early, are fit to eat when lifted. Paterson's Early Red and Kidneys are singular in their habits, and keep good all the year round, and are particularly well fleshed.

The intrinsic value of the Potato as an article of commerce is estimated by the quantity of farina they yield. By analysis, Paterson's Victoria and Paterson's Blue are heaviest in farina; but as an article of

domestic economy, the flavour of the starchy matter is of more consequence than its quantity. Almost every one prefers a mealy Potato to a watery one: A good Potato is known by the rich meal immediately under the skin, not mucilage as in a bad one.

I suppose every one is aware that a light soil produces better flavoured Potatoes than those grown on clay soils; the soil has an influence whatever may be the variety. Those grown on land previously manured are better flavoured than those grown in intermediate contact with dung. This shows that manuring in the autumn is the best method to adopt, with a top dressing.

What invigorating substances, and in what proportion a Potato manure should possess, is rather a difficult question to answer, and must remain with the chemist to decide; but, as Dr Fromberry says, the substances that ought to be in a Potato manure are the following, arranged according to their several proportions in tons, viz. :-

Potash,	1180 lbs.
Magnesia,	87 "
Soda,	87 "
Lime,	50 "
Sulphuric Acid, ...	416 "
Phosphoric Acid, ...	235 "
Chloride,	195 "
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2240 lbs. = 1 Ton.	

SEED POTATOES

SHOULD be Potatoes purely grown for seed, on moss land or newly taken-in land, and should be thickly planted—about 6 inches from set to set—which will cause them to grow a uniform seed size, containing more soluble than fecula matter; and in many cases

such seed will yield several tons per acre more than small or middling Potatoes. Dress out of Potatoes grown specially for table use, as they are sometimes the latest efforts of the Potato bearing; but, as the small part of the crops may be fully ripened, which makes them

as unfit for seed as the large ripened ones, if you desire a good heavy crop, in all cases select varieties suited to the soil you intend to plant on. Some of them may be too large to be planted whole. In cutting, be sure that each set has two or three eyes, as it is great waste to plant too large Potatoes. Sets of late varieties should weigh from 2 to 3 oz. each set. Earlies, smaller Kidneys, Victorias, and Fluke Potatoes do best whole. If too large for seed these can be cut in two sets by carefully cutting them down the centre, putting the knife right between the top eyes in all cases. Flukes and Victorias, if for seed, should be planted late in the season, and not so much room between the sets. They consequently grow more numerous, but smaller, making them of much more value for that purpose; as if cut seed they invariably are blanky when grown, causing great loss in the ware crop.

Nothing is easier than to select the large Potatoes for planting; but if the generation of Potatoes was to be conveyed through the smallest of the crops the general diminution of the produce would be a matter of certainty. The Potatoes ought to be treated like live stock, and properly developed seed only allowed to generate. Its gradual but permanent improvement would be certain, and the increase of the crop could not but leave a rich and profitable reward. With regard to the different varieties of Potatoes, they are now so numerous that to name a selection is a matter of greater difficulty than one would first think or suppose. If it were judged that such a list should be generally used, the application of it would very much depend on the climate. Frequent instances of failure in particular localities with varieties that have done well elsewhere in the same season, and even from year to year, could be given. There are now so many varieties that there is little difficulty in obtaining Potatoes suitable for every district, both for field and garden, which have undergone comparative planting, conducted with great care, and reported on from time to time, which enables growers to select varieties most suited for the various districts.

Perhaps no absolute rule can be laid down as to when the particular varieties are at their best; but they may easily be classed in three divisions—first, the Early Kidneys and Paterson's Early Perfection; second, Paterson's new

Whitefield Kidney, Paterson's Albert, and Princess of Lorne Potato. These varieties are perfect in habit and quality, with flesh as white as paper, and will keep good for table use up till May month; and third, Paterson's Victoria, which, if planted early comes in early, and if planted at the ordinary time will keep good all the year round. Among the later varieties Paterson's British Queen, Paterson's Napoleon, Paterson's Red and White Regents, Paterson's Alexandra, will, as a rule, when grown on suitable soils, keep as long as any variety. Paterson's Seedling Flukes, Rocks, and Blue Potatoes do not come in good till April month. This adds much to their value, as they can be depended on by growers at a season when many of the early varieties go out. Paterson's Bovinia does to be planted as late as May or June month.

It might be supposed, and no doubt the supposition has been acted upon, that all Potatoes are very much alike, and that there is no necessity for exercising any care in the selection of varieties for cooking at the different periods of the year. This is an error, as all who have paid attention to the culture of Potatoes must admit that they cannot be so palatable or wholesome unless they possess their proper nutritive qualities, by being properly ripened and otherwise in a fit condition for use. It may be said that all blue Potatoes are "livery" if used in the autumn. Formerly farmers were in the habit of growing only one or two sorts, and just using these all the year round; but there is no reason why this should be done at the present time, when there is no difficulty in obtaining what is most fitted for the different seasons. I may mention that there are some of the early varieties very productive, and keep good till far in the season. Paterson's Early Red Kidneys is a very heavy cropper, and keeps good till March month.

At the same time, I may say that a great change has undoubtedly taken place for the better during the last few years; and it is extremely gratifying to find how rapidly the new kinds of Potatoes are making their appearance throughout the country, alike in the fields and gardens of the rich and poor. Instead of "Taties and Taters" we find Paterson's far-famed Seedling Potatoes true to their name.



PREPARATION OF POTATO SEED.

WHILE the land is preparing for the Potato crop the seed should also be preparing. Potatoes are either planted whole or in cut sets. From 12 to 15 cwt. of seed will plant an acre. Open the Potato pits by removing the thatch and earth, and for convenience you may have them removed into any outhouse. If whole sets are at all available, which is at all times the best and safest, they should weigh 2 oz., and, to ensure their decay, have a slice cut off the lower end of each of the sets. If this is not done the skin often forms a hard coating, and retains the moisture that the young tuber should derive its nourishment from until it is strong enough to draw it out of the soil. If at all possible, extra workers should be obtained at the time of planting, for selecting and cutting the seed, as the sooner it is planted after being cut the better. In selecting tubers to cut into sets, the middling sized that have not been sprouted but merely pushed out buds will be found the best. When the sprouts are long they should be removed, unless for garden planting, for in field planting it would be impossible to preserve them entire; but if the quickening of the tubers are only mere buds they should be preserved. The number of sets that a potato may be cut into will depend on the quantity of eyes it may contain; but unless two or three eyes are left in each set the chance is there will be a blank, as one of them may have lost its vitality. If large Potatoes are cut, you might take two or three sets of the top or crown end of the tubers; the root end may be kept for feeding poultry or pigs. Early Kidneys, Fluke Potatoes, and Paterson's Victorias do not do well unless cut in two right down the centre. Round Potatoes and Paterson's Bovinia should be cut at angles. When fresh and in good order the tubers cut crisp and exude a good deal of moisture, which soon evaporates. A common practice, but a very bad one, is to heap the cut sets in the corner of a barn. If

heaped up immediately after being cut, and while quite moist, the probability is that those in the bottom and middle of the heap have attained a degree of heat and fermented. Such seed never will vegetate. I believe that much of the injudicious treatment that the sets of Potatoes receive is for want of extra hands at the time of planting, or inconvenience of accommodation for spreading them out thinly after they are cut. A mixture of earth and a little lime should be sprinkled over them, which will absorb the sap exuding from the incised parts; the lime and earth will form a paste, encrusting itself on the incised surface.

Since the prevalence of disease in all soils and all districts, numerous experiments have been tried of preparing the seed, with a view of warding off the attacks of blight. Perhaps the treatment of the seed as given above is likely to prove as good as any method that has as yet been devised.

Mr John Barret, of Cayuga Bridge, says he and most of his neighbours lost their entire crop of Potatoes by the rot; that the next spring he went to another town for fresh seed, where he obtained a supply for himself and a neighbour, and where he was told how to prevent the disease. He and his neighbour planted the seed in adjoining fields—the seed, soil, and treatment similar, except that Mr Barret applied the remedy recommended to him—which consisted in sowing ashes once a week for six weeks, commencing after the second hoeing of the crop. He used two or three bushels of ashes per acre: the result was that his field was entirely free from the disease, while the Potatoes in the adjoining field, where no ashes had been used, were badly rotted. Since that time, Mr Barret and many of his neighbours have adopted this remedy, and have been free from the disease.

TO MEASURE AN ACRE OF LAND.—30½ sq. yards make 1 sq. rod; 40 sq. rods make 1 sq. rood; 4 sq. roods, 1 acre; 640 acres, 1 sq. mile; 4,840 sq. yards, or 160 rods, make 1 acre. In measuring an acre by yards, the usual practice is to trace off 70 yards in length and 70 yards in width. This, in a rough way, may be considered near enough

for practical purposes; but, as 70 yards either way make 4,900 sq. yds., it exceeds 1 acre by 60 yards. To determine an accurate acre, it may be measured 70 yds. in length by 69 1-7th yds. in width. The same result may be arrived at by measuring 220 feet in length and 198 feet in width, or by measuring 73½ in length by 66 yards in breadth.

DISEASE IN THE POTATO.

THE Potato plant is subject to a great many diseases, not only after it has developed its stems and leaves, but even before the germ has arisen from the tuber.

In the disease called the "Curl" the leaves assume a crumpled appearance, the young shoots and leaves showing weakness in the plant. Some growers attribute this to have originated from sets being planted off "curled" Potatoes; others that it arises from the vegetation of the "sets" planted having been exhausted by being over-ripened. However this may be, it stops materially the growth of the plant, and of course takes that nourishment away which the tuber should get from the atmosphere.

Another disease, known by the name of "Rust," very often does much harm. When this takes place the plant stops growing, and the tuber ceases to swell.

The disease called "Sprout" appeared very much in 1868. The cause of this is the *healthy condition of the plant* and premature ripening of the root, on account of dry weather and the rain which immediately follows, say in August, which it did in 1868, causing a reaction in the constitution of the Potato, not at all injurious to the first crop, but giving the grower a chance of securing an additional weight of Potatoes in the ground, and the small ones or second crop make good seed.

Care should be taken in such a case as the "Sprout" when the Potatoes are pitted to keep them exceedingly cool, with plenty of straw over them, but little earth, till they harden.

Potatoes for seed should be carefully pitted, kept dry, cool, and not exposed too much to the atmosphere.

In 1846 throughout the land a disease affected the plant with so much virulence and subtlety as to baffle the ingenuity of the philosopher as well as the agriculturist to discover its nature; so much so, that the British Government became alarmed, and sent scientific men to try and discover the cause and find a remedy. Some attributed it to an insect, some to fungi, others to curl or murrain; but as its virulence increased, and as no one could authoritatively define its characteristics, and as they could make nothing of it after much labour, it was just called the "Potato disease," or blight.

Its earliest appearance in the tuber is indicated by discoloured red blotches on the skin.

As the disease progresses it deepens into the flesh of the Potato, becoming darker in the colour, and if it does not stop reduces its victim to rottenness and putrefaction. This is even effected before they are taken out of the ground, as well as after they are put into the pits. So loathsome is the feeling attending it that even hunger itself cannot tempt the human being to eat or even taste the tainted part of the Potato. But there is a time when the disease "stays," and leaves only a portion of the Potato good. One may tell when the disease has done working, as the part becomes perfectly black; and any one taking the trouble may tell how many days old it is in the tuber.

It must be remembered that sometimes when Potatoes are taken up in very dry weather, and pitted as clean as apples, they will take a dry rot, going into a state of white decay, but this does not often happen. They will sometimes become entirely soft, melting down to a lot of putrid matter. This is often not the fault of the Potato, but the stupidity of those who pitted them by putting on them, when just lifted and perhaps the Potatoes very damp, a covering of earth fit to protect them all the winter from frost; whereas, if plenty of straw had only been put on them, with a shovelful of earth here and there to keep it down, the steam caused by heating would have evaporated, and the current of air blowing through the straw would harden them up for winter keeping.

No doubt the season has a deal to do with the healthy state of the Potato, for one year you will hear no complaints about blight, and the next every one is complaining. The month of August is the most trying; and heavy, rich land and hollows in the field generally seem to be most affected.

Many conjectures have been put forth, and many have been the experiments tried, which have been accepted or rejected according to the predilections of the individual; and while one has succeeded in one plan, it has totally failed in another—even failed on the same farm in the next season. Cut sets (large and small), whole Potatoes (large and small), early and late planting, strong soils and light soils, high situations and low situations, with manure and without manure, manure in the furrows in direct contact with the sets, and indirectly, various kinds of manures, drawing some of the

stems, picking off the blossoms, encouraging the seed apples to grow and ripen, letting the tubers lie till dead ripe, taking them up before they are ripe, pitting them at the usual time, allowing them to remain in the ground all the winter, trying one variety and then another (old and new, late and early kinds), removing them from a cold climate to one more genial, and from a warm to a cold climate, bringing them from South America (their native clime) —one and all of these experiments have been tried, and the greatest care and attention bestowed in their application that skill and ingenuity could devise; but I am sorry to say that all have failed to produce a single conviction that we are better acquainted with the nature of the disease than we were at the first outbreak, or nearer finding a sure remedy for it. One preventative is change of seed, as repeated planting from the same stock on the same farm increases disease.

I take the Potato disease to be somewhat analogous to an epidemic which may overtake the human system for the first time in any country. After it has run its course, it never fails to leave a lasting impression of its existence more or less ever after.

The most sure and effectual remedy to prevent disease is the raising of new varieties from the seed of the plum or apple of Potatoes. If this is done, and regularly continued, we will always have a young and healthy stock growing up, which will be the better able to hold out against the adversary. This is necessary, for every year the disease appears more or less, and, as in 1846, might overtake the whole crop in one night, which might cause a famine, and would not be easily overcome, as there is not sufficient grain grown in one year to supply the want that would be created by a Potato blight. In the year of the great blight, wheat rose in price from 40s. per quarter to 100s. and upwards in the space of nine months.


Although Paterson's Seedling Potatoes have not been altogether free from disease, I beg to remark that the new varieties may have been produced from diseased stock. We have no evidence to show that the Potato apples gathered for the purpose of raising new stock had been the fruit of sound plants; quite the opposite. If the argument holds good that the seeds of disease lie in the Potato, ready to be developed at a favourable opportunity, are the apples gathered from them, with their thousands of small seed inside, free from disease? I would say no. The haulm may not have shown any symptoms, nor the tubers indicated anything but a healthy appearance, yet the embryo of disease may still have been in the plum or apple. But if such experiments are continued, although an arduous proceeding, it ultimately must result in good.

A singular corroboration has been noted of the curious and important fact that Potatoes, however much diseased, may be safely and advantageously planted for seed at any season of the year that sound ones may be planted, and in many cases they have produced heavy crops of sound Potatoes. The diseased ones soon rot when the life part begins to grow, while the sound Potatoes are apt to remain hard and brittle even after the new crop is grown and ripened.

I think that in the former case there is an effort to throw off the disease. It is possible that the morbid matter may disperse in the general decay of the tuber in the one case, and may remain unchanged in the other. At least, I can give no better explanation of this rather curious fact, but it has been in practice, and is in reality very valuable, particularly as there is again a considerable amount of disease in the country.

I recommend every one to try the experiment, by planting sound and diseased tubers side by side in the same field.

EARLY GARDEN PLANTING.

 S varieties of early Potatoes are now numerous, and as no particular kind will continue more than twelve years, new kinds must continually succeed those that are worn out. At present varieties are very numerous, which I have no doubt have almost all sprung from the mixed varieties that were gifted and sold in 1862 to English, Scotch, Irish, German, and American growers, in hopes that some

good varieties would be selected from them, both oval and round-shaped, containing an extraordinary amount of farina, and flesh as white as milk. I am satisfied this has been the case, from the appearance of a great many varieties of altogether new kinds in the country besides Paterson's own named sorts. Therefore, every grower would require to get those best suited to his district. Change of

seed from a cold climate to a warm one is advisable, as repeated planting of the tubers in the same district increases disease.

Select light soil well manured the previous autumn, as the Potato will be of more delicate flavour from ground not recently manured; and if quantity of produce be particularly desired too much manure can hardly be given.

In preparing for planting, make furrows or drills, 18 inches apart and 4 inches deep, with 6 or 8 inches from set to set. As all earlies are best when planted whole, a piece should be cut off the stalk end, as if this is not done the set is apt to retain the moisture that should go to the young tuber as nourishment. Paterson's Early Red and White Kidneys are two of the best sorts for early planting. They are handsome shaped, shallow-eyed, fine flavoured, and as heavy croppers cannot be surpassed; and the far-famed Red Kidney is the only early Kidney known to keep good all the year round. If planted in February they will come in good in May month. Paterson's Early Perfection is one of the best early Potatoes; and Paterson's Victoria, if planted early comes in early, and keeps good all the year round. It is well named the Queen Potato.

Carefully place the sets 8 inches apart in the drill. If wood ash or charred vegetable refuse be thrown over the sets before covering up, it would be of service as extra manure, and would produce Potatoes of a more delicate flavour, and might be a preventative of disease.

In stiff or retentive soils decayed tan, if freely used, in many cases is highly beneficial to the crop. The haulms may appear above ground in a few weeks. When they do appear, carefully draw the earth over the sets, taking care not to break the sprouts. After the

haulms again appear above the ground the only attention the crop requires is careful hoeing; and carefully from time to time draw the earth round the haulm till, by their growth, they meet in the drills. If this is judiciously done, so as not to injure or cut the haulms, the greater will be the produce. If protection from frost is required, stretch mats over them, supported by poles.

If Potatoes are wanted very early in the season, greater care must be taken in preparing the seed. Place them in layers amongst a little earth in boxes, placing the boxes in a warm cow-house or greenhouse. By this means they will get an early and vigorous start; or, if planted in the end of December in a frame or early border, with an airy southern aspect, they will come in for table use in May or June months. As early Potatoes very soon become green and deteriorate in flavour when exposed to the air, a few only should be taken up at a time, as they will not keep over a day or two. At this season the skins are easily cleaned by rubbing, and a few minutes will boil them.

It is easily known when Potatoes are fully ripe, as the shaws become yellow and fall down. They should then be taken up.

The method for keeping them is in pits, either round or square, sinking a few inches below the surface, keeping the Potatoes well up at the top, and covering them well with straw and earth, so as to completely exclude them from the frost. If for seed purposes, some prefer greening and keeping them in dry houses. This is done by allowing them to lie on the ground after being dug up and exposed to the sun and air. Of course this must not be done in frosty weather.

PATERSON'S SYSTEM OF STANDARD FIELD CULTURE.

POTATO Crop is generally planted on the fallow division of the farm, following a crop of grain, and the land best suited is light loamy soil, deep ploughed with the subsoil plough, and well drained: but as landowners restrict to a rotation of cropping, such land is not always available. However, steam cultivation and heavy manuring renders the heavy soils quite available for potato crops; and with proper management there is no crop that will pay better, or make a better preparation for wheat.

The land should be deep ploughed in the

autumn, and well manured at that time with plenty of farmyard produce—say 15 tons to the acre—and it also will be open to receive all the benefit of the winter frosts. Potatoes when planted with newly laid in manure are often burned up and destroyed, causing blanks which otherwise would not be. This is especially the case with cut seed.

In the spring the land should be clean and ready for drilling. If not so, cross plough and harrow. If still dirty, use the grubber, which will be a better implement for stirring the soil, and will take off the surface weeds.

Plant earlies in February; later varieties, which produce more haulm, on till the middle of May. In April have your furrows set up with the double plough, from 25 to 30 inches from line to line, and plant from 10 to 12 inches from set to set Paterson's Seedling Flukes. Victorias do best to be planted whole. Regents, Rock, and other late varieties do to be cut, but the crop is always most safe if whole sets are planted. Whole sets should have a piece cut off the stalk end to ensure the decay of set. If this is not done, the skin often becomes hard, which retains the moisture, that from which the young derives its nourishment until it gains strength enough to take it from the soil. The sets should be conveyed to the planters in baskets, and carefully dropped into the furrows with the eye part uppermost. A top dressing of potash or soot before they are covered up circulates in the sap, influences chemical changes very much, and fixes themselves in green and fleshy leaves and in bulbous roots. Then cover up as quickly as possible in the same manner as the furrows were opened, and at no yoking drop more sets than can be covered up, for if left exposed to the sun or frost in the morning you may lose your crop altogether.

Nothing more requires to be done till such time as the haulms are above the ground, which may be in three or four weeks, which will greatly depend on the state of the weather. When they are about four inches above the ground, the hand-hoe or scuffer ought to be passed between the drills, so as to remove the weeds, or they may be removed by the hand. After a time the drill grubber should go along the drills, so as to destroy fresh weeds. Potato ground being prepared so early in the

season, the weed in potato is generally ruinous or detrimental to the plant. By this time the haulm ought to be meeting in the furrows, ready for the last furrowing. As potatoes possess a spreading root they do best with a uniform manuring, requiring more soluble manure during the latter part of their growth. The tubers being developed at that period, a top dressing of guano—2 cwt. to the acre—before the last furring up makes a good azote for the tubers. The best manure to be used for potato planting, applied in the autumn or spring, is that which contains plenty of azote, and not to decompose too quickly. If the flowers on the haulms of potatoes are picked off before they run into plums the crop will be much increased, much more than if the plums had been allowed to ripen. Besides the increase of tubers, from the tops much green matter will be obtained, and if made into manure, and applied to the next year's crop, you will observe a marked increase of tubers.

When potatoes are ripened they show decay in the haulm. The sooner they are lifted after that the better. There are various methods of lifting, but the best and cheapest one is the one that lifts every one out of the ground. The plough, if well set, is a good fashion, and they should be lifted before frost sets in, not later than the end of October. After the trouble and expense of growing and lifting such a precarious and valuable crop, great care is required in storing or pitting them. Make your pits in a well-sheltered place, protected from the north wind, and, if possible, of easy access. See description of pits. Some people store in houses, but potatoes never look better nor keep better than in pits or clamps, well strawed up with very dry wheat straw.

STANDARD FIELD CULTURE OF POTATO.

POTATO crop is generally grown on the fallow division of a farm. If possible select rather light, deep soil, that has been deep ploughed, well drained, and well manured.

However, a very common practice prevails in planting with manure direct in the furrows in the spring, if the land is clean; if not it should receive another ploughing in the lines of the ridges. Cross plough if necessary, and use grubber and harrow to clear the ground of weeds. The grubber will be the better implement for stirring the soil. As the land cannot receive any more ploughing in early

spring than is necessary to make it still more tender, the drills for the manure should be set up by the double mode. I believe in going to the bottom of things, and, therefore, of deep ploughing, and enough of it. All the better if it be a subsoil plough.

Plant whole seed if possible, which is at all times the best; or seed may be cut, care being taken to cut the Potato so as to leave at least two eyes for growth. This should especially be looked to, as if not done blanks will be caused in the field. As soon as cut, Potatoes should be planted to prevent evaporation and the sap exuding from the incised parts.

Having drilled with the double furrow plough as much as make a start, from 18 to 20 inches between the furrows, and from 4 to 6 inches deep—the manure being brought to the field in a cart which takes in three drills—it is then dropped out in as equal heaps as possible, and distributed at about 15 to 20 tons per acre, taking in the three drills in spreading.

Immediately after the operation of spreading the manure, the Potato planters commence carrying the sets, in baskets prepared for that purpose, and then drop them into the furrows, from 8 to 12 inches apart, the eyes being laid uppermost. Some planters prefer carrying the sets in coarse aprons. Potatoes with large grown haulms require more space. Paterson's Bovinia or Cattle-feeder require the furrows to be 30 inches apart, 9 inches deep, and 22 inches from set to set. As it takes a much longer time to plant than it does to spread the manure, two sets of planters should be engaged. It is also desirable that fresh seed be obtained, as tubers from the last year's crop if replanted in the same district feeds disease. When they are thus planted, the ploughman should immediately commence to cover up. Never leave the sets uncovered, even at leaving-off time from the forenoon yoking.

Always make it a point to have every drill properly covered up as soon as opened and planted, as both Potatoes and manure will become scorched by the midday sun, and in such a state the manure is not so useful, not altogether on account of evaporation, but because it does not incorporate with the soil so well as when moist. When soil and manure together are rendered hot and dry by exposure, their incorporation is rendered very difficult, and in many instances the crop has been a complete failure through such negligence. A moist day (with proper attention) is the best time to plant; otherwise, the sets being exposed to the action of the sun, and immediately covered up in the hot earth and manure, they will in very few instances vegetate.

In covering up the Potatoes, the drills are split in the same way as they were set up.

After planting, nothing more requires to be done till such time as the haulms appear above

the ground, which may be expected in a fortnight or three weeks, according to the state of the weather and the season of the year the Potatoes have been planted. The later in the season the quicker will they vegetate. As soon as the haulms are about four inches above ground, the weeds should be removed by hand hoeing. After a little while let the drill grubber go along the drills, so as to destroy fresh weeds.

The ground for potatoes being prepared so early in the spring, the weeds that frequent them are numerous, so that frequent stirrings stimulates their growth; and until the haulms cover the ground, keep the surface deeply stirred. A hand-sowing of soot and guano—say about 2 cwt. to the acre—before the last setting up will stimulate the growth of the roots, and may be a preventive of disease. Guano and potash as a top dressing has been believed to ward off blight.

If the flowers of the plant are plucked off before they run into plums (particularly the Victorias), which can be done by boys at about 3s an acre, the crop will increase one-third more than if the plums had been left to ripen, as it will be evident much strength of the plant goes to nourish the plums or seed.

The spade cultivation of potato is only appropriate for cottagers or small farms, being by far too expensive where horse and plough work can be obtained. There are many other methods of cultivating the potato in the fields besides what I have described. One very curious, and worthy of notice, called "*Lazy-beds*," which is more practised in Ireland and on the island of Arran than in any other part of the country. Although the system on arable land is becoming less general, on old lea land, undrained bogs, and mountainous districts, where the plough cannot penetrate, there cannot be a better system found. The manure is spread on the green sod, then the sets are laid on the manure in square beds at proper distances, covering up with the earth from the sides of the squares, leaving trenches, so that the water may drain away, and keep the potatoes so far dry.



POTATO LIFTING.

IN the Autumn, when potatoes are fully ripened, which is at once seen by the yellowing or decay of the shaw, they are ready for, and should be lifted, and that, if possible, in dry weather. The method of lifting potatoes by the hand with graips is efficient, but very costly, being from 25s to 35s per acre. Hanson's Potato Raiser is an excellent implement, but considered by farmers as too heavy and over costly. The common plough, if well set and held, is better, turning out the potatoes clean, and to one side of the furrow.

After the trouble and expense of growing the crop, of course every care should be taken to store or pit them. Make your pits lying north and south to prevent the full force of frosty winds on them, and also let them be in as sheltered a place as possible, and of easy access to carts. Make your pit narrow, say 3 to 3½ feet wide and 6 inches deep. Heap the potatoes well up to form a good ridge—to form a right-angled triangle—put on plenty of straw,

and as much earth as will keep down the straw till the potatoes have time to cool, as sometimes they steam a good deal. If there is plenty straw used, they may lie a long while this way, if the weather is not frosty, and they will keep cool and harden. As the frost becomes severe, then give them another substantial coating of earth, and they are right for the spring. Potato shaws spread along the ridge of the pit, and indeed all over it, is an excellent security against frost. Indeed, some of our pits, with the straw sticking out all along the ridge, with a good covering of shaws, have stood securely all the winter, and the potatoes came out as hard as bullets. However, it is as well to look at them now and then, especially if they are kept late, to see if they are keeping sound, or if there is much growth amongst them. If growing, they must be turned over, and the stems picked off, and as little exposed to air as possible, as they will deteriorate in colour and flavour.

DESCRIPTIVE LIST OF POTATOES.

IF stems of Potatoes grow vigorous, they will require more air and room than those shallow in the haulm. As to varieties of Potatoes, it is almost impossible to tender an advice, because it is not always applicable. Very much depends upon the soil and climate as to the varieties which should be selected. Instances frequently occur of failures in particular localities that have elsewhere been grown in the same season, and, indeed, from year to year, with great success. Potatoes have been transplanted from England to Scotland, others from Ireland to Scotland, and in many cases produced inferior crops from what they did in their native soil. A material effect has been produced in the plant by transplanting from one place to another in the same locality. The general means to ensure increase of weight of crops and quality of Potato is in transferring them from an inferior soil to better soil and from a cold climate. Rock Potatoes put out long filaments into the soil. Surely it would be improper to plant that variety in strong clay soil, which naturally oppose the penetration of tender filaments, when a light sandy soil would at once encourage that particularity

of growth? Paterson's Victoria, for instance, press the tubers so closely together that soil is not of so much consequence; but I would suggest using some consideration in the selection of Potatoes for the particular soil in which they are to be planted, which very few farmers ever do. When in search of Seed Potato, they pay little attention to their habits or growth. However, they seem to direct attention to the foliage and flowers, when their constitution and habits underground are entirely neglected. The matter of growing Potato is really one of vital importance to the nation at large, as bearing directly upon a question which has engaged the earnest attention of the statesman, the philosopher, the economist, and men of science. The varieties of good Potatoes are now so numerous that it would take up too much room to give a descriptive list of one-third of them.

Nothing is easier than to select the largest tubers for planting. Sets of medium are always the most perfect in shape. Every increase in the size of the set from 1 oz. up to 6 oz. in weight is found to produce an increase in the crop much greater than the extra weight

of the set planted. The extra weight in 4 oz. in lieu of twelve sets show a few tons more to the acre, and sets from 4 oz. to 8 oz. average proportionally of the increase. I would strongly recommend cottagers to use a line in planting these potatoes, the soil being drawn away from it with the spade to an equal depth, and the sets can then be placed at regular distances all on the same level, which cannot be done with the dibble; thus the crops come up regular, besides an increase of produce fit for table use.

PATERSON'S EARLY RED and WHITE KIDNEYS are invaluable for early forcing, are handsome shaped, shallow-eyed, fine-flavoured, white-fleshed, and, as heavy croppers, may be equalled, but cannot be surpassed. The famous Red Kidney is the only early Kidney known that will keep good for table all the year round. Both kinds should be planted whole in drills 30 inches apart, 4 inches deep, and 14 inches from set to set.

PATERSON'S EARLY for garden planting is round-shaped, shallow-eyed, grows large size and most prolific, and particularly white-fleshed, and of fine flavour; does to be planted whole or in cut sets, in drills about 30 inches apart, from 4 to 6 inches deep, and 14 inches from set to set.

PATERSON'S VICTORIA for field or garden planting was first introduced into the country in 1860, is of handsome form, very prolific cropper, rough-skinned, handsome-shaped, flat potato, and particularly shallow-eyed, and as yet has withstood the attacks of blight. If planted early comes early, and keeps the longest of any Potato; has purple blossom, which bears plums very profusely. Plant in furrows 30 inches apart, 5 inches deep, and 18 inches from set to set.

IMPROVED VICTORIA OR QUEEN POTATO—A SEEDLING OF THE FIRST VICTORIA POTATO.—This Potato, truly the Queen of all others, is admirably suited for field or garden planting—in fact, it has been said that the Victoria will grow in any situation. Hardy in constitution, it is one of the best resisters of disease known. It is most handsome in form, having few eyes, and those shallow, so that for domestic purposes it is most economical. The flesh is white, and the quality has always been universally esteemed; and it has this good quality, that, if properly stored, it will keep good for twelve months. No sprout; purple

bloom. Plant 6 inches deep, and 14 inches from set to set.

NAPOLEON.—This fine Potato, much like the Victoria (field) late, is a most vigorous grower and healthy. This Potato resists almost any weather, is very prolific, but does best in France. Plant 16 inches from set to set, drills 30 inches apart, and 5 inches deep.

SEEDLING REGENT.—The heaviest cropping Regent in cultivation; rough-skinned and very firm, fine in form, excellent in quality, and a most vigorous grower. No sprout. Plant 12 inches from set to set.

FLUKE.—Paterson's New White Kidney, for field or garden planting, third season out, second early, a very handsome, heavy, and regular cropper, the whitest fleshed Kidney ever seen; brought £8 per ton in London on the first of June; a variety highly worthy of notice for English growers, as the old variety has from repeated planting died out. It is fine quality when lifted, and keeps good for table use all the year round. Plant in furrows 30 inches apart, 4 inches deep, and about 16 inches from set to set.

SEEDLING ROCK (FIELD).—A valuable Potato, especially for heavy soil planting, an enormous cropper, very hardy and vigorous, white-fleshed, and fine shape. Plant 14 inches from set to set.

ALEXANDRA (FIELD OR GARDEN).—A bold, round-shaped, peach-eyed Potato, particularly white-fleshed, fine in quality, enormous cropper, and robust in constitution. Plant 14 inches from set to set, 30 inches between the furrows.

BLUE (FIELD OR GARDEN).—This is one of the finest Blue Potatoes in cultivation. It has bold Regent-shaped tubers, rough-skinned, white-fleshed, and fine quality, and an enormous cropper; a fine disease resister. Plant 16 inches from set to set.

RED (FIELD).—Bold, heavy cropper, robust in constitution, and fine quality. Plant 16 inches from set to set.

ZEBRA.—A striped, round Potato, and grows to a great size, an enormous cropper (next to Bovinia), and a fine early market Potato, field or garden. Plant 18 inches from set to set, and 30 between the furrows.

EARLY PERFECTION—Second year out for field or garden planting. It is a well-formed, White-Regent-shaped Potato, shallow-eyed, beautifully white-fleshed, fine-flavoured, heavy cropper, and of the habit of Victoria or Queen Potato; grows very few small. Plant in furrows 30 inches apart, 5 inches deep, and 14 inches from set to set.

PATERSON'S SEEDLING FLUKE.—Second season out, for field planting. In shape fuller than the old variety, white-fleshed, fine-flavoured, and a heavy cropper; a seedling much wanted for English growers, as the constitution of the old variety, from repeated growing in the same district, has become so exhausted as not to be worth planting. Plant in furrows 5 inches deep, 30 inches apart, and 16 inches from set to set. White blossoms.

PATERSON'S PRINCESS OF LORNE, or Seedling from Paterson's Victoria or Queen Potato, in habit the same, but whiter fleshed, with pink eyes, a second early for field or garden planting, heavy and regular cropper, grows very few small, may be equalled but cannot be surpassed. Purple blossoms.

PATERSON'S BRITISH QUEEN, second early, for field or garden planting, a distinct red-skinned variety, of handsome form, particularly white-fleshed, quality may be equalled but not surpassed. Grows a very regular size, and no disease. Plant from 36 inches between the drills, and 5 or 6 inches deep, and 18 inches from set to set. Pink blossoms.

NEW PERTSHIRE RED, OR RED REGENT.—Enormous cropper, excellent quality, and

great favourite in England. Plant 14 inches from set to set, and 30 inches between the drills. Paterson's Fortyfold Garden Variety, coloured-skinned, very white-fleshed, and fine, rich flavoured. Plant 14 inches from set to set.

IRISH BLUE (FIELD).—Enormous cropper, most hardy and strong grower, quality excellent. Plant at least 14 inches from set to set.

SCOTCH BLUE (GARDEN OR FIELD).—Very prolific and firm, fine quality, heavy cropper, particularly white-fleshed, with very dark, smooth skin, but particularly white. Should be planted 14 inches from set to set.

PATERSON'S BLUE KIDNEY (FIELD).—Rough skinned, bold, fine quality, and heavy cropper, but does not come in good till the spring months. Does well in the southern districts. Plant 14 inches from set to set.

THE FAMOUS NEW ALBERT OR PRINCE POTATO.—If the Victoria is the Queen Potato, the Albert is rightly named the finest second Early ever brought out for field or garden planting. It does to be planted in any soil; is pink eyed, coloured-skinned, round variety; is fine vegetable marrow flavoured, heavy and regular cropper, grows few small, and particularly white-fleshed; comes in early, and keeps good till the new Kidneys come in again; quite the old, rough, coloured-skinned variety back again; and when boiled they cast their coat, as in olden times. When this fine Potato is known, it is sure to be a great favourite. Third season sold. Plant in furrows 30 inches apart, 5 inches deep, and 16 inches from set to set. Bears no blossoms.

PATERSON'S ALBERT POTATO.—This is one of the best late-keeping potatoes I am acquainted with, and its valuable qualities deserve to be very widely appreciated. It belongs to the late round section, but partakes of the pebble shape, has a pale red skin, is an excellent cropper, and keeps remarkably well. For the past two years I have used it for all purposes at this season of the year, and the tubers are as fresh and plump as in October, and they keep so till April. The flesh is very white, it is floury in appearance when cooked, and for mashing I know of nothing to equal it. It is particularly as a potato for mashing that I would commend it. The influx of coarse and practically useless American varieties of the potato during the past three years has tended to draw aside the public attention from

the excellent properties of some of the varieties distributed by the Messrs Paterson of Dundee a few years since, some of which will be cultivated in our gardens long after the American varieties are utterly forgotten. Alike after the dry season of 1870 and the wet one of 1871, it has maintained its good character; while the American Rose, for instance, which, at the end of the dry season of 1870, ate pretty dry and good, is, after the much moister season of 1871, almost universally condemned. Desirous of rendering honour where honour is due, I have penned this paragraph, in order that the services rendered to horticulture by Messrs Paterson should not be wholly overlooked.—*Richard Dean, Ealing, W., in Gardeners' Chronicle, 1872.*

REPORTS ON PATERSON'S BOVINIA POTATO.

WUCH has been said and written about that monstrous Potato, Paterson's Bovinia. I procured 1 lb. last spring, which consisted of one large and one very small Potato. I carved these into bits with one eye to each, which were planted April 4th under by no means favourable circumstances, being, for lack of a better available site at the time, planted between two rows of raspberries, the spreading roots of which must have drained the soil of much that might have gone to the support of the Potatoes. Nevertheless, on taking up and weighing the crop a few days ago I found the weight of Potatoes to be 84 lbs., some of the tubers weighing over 3 lbs. each. The largest Potatoes were the oddest and most wonderful-looking objects imaginable, the oddness of their appearance being greatly enhanced by their having super-tuberculated to a considerable extent, the clusters of young Potatoes (some of which were of a large size) sticking about these monster tubers in all imaginable forms and shapes. I think it will prove essentially a cattle Potato, being so deep and many-eyed, and by no means handsome, though on trial the flavour was found to be very tolerable.—W. HUDSON, *Chase Cliffe, Derby.*

LAURENCEKIRK. — MONSTER POTATOES.—Judging from various reports of large Potatoes, we assume that the crop of that excellent esculent is heavier this season than usual, and we do not think that the farmers of the Mearns need blush at the inferiority of their crops, if five Potatoes, which may be seen in the shop of Mr Lawson, druggist here, be any criterion of what can be dug from the fields generally. These range from 2½ lbs. to 1 lb. 12 oz., the whole weighing upwards of 10 lbs. after being clean washed. They are of Paterson's Bovinia variety, and are part of the result of two stones planted by Mr Blacklaw, on a field at Milltown of Arbuthnott, the space occupied having been 180 lineal yards of a drill, 5 poles superficial, and the quantity gathered 6½ cwt., or at the rate of 10 tons per Imperial acre; and Mr Thomson, maltster here, dug up in his garden the other day a stem of Red Kidney Potatoes, at which no fewer than 29 individual tubers hung, the largest of which weighed over 2 lbs.

GARLOWKIE, KIRKLISTON, 27th Nov. 1869.
Mr W. Paterson, Potato Merchant, Dundee.

DEAR SIR,—I planted here on the 9th June

last the two tubers of the "*Cattle Feeder*" which you were kind enough to send me, and the following is the result:—

They were cut into "sets" in the usual way—one eye to each—and planted in good heavy loam, on a clayey subsoil, well drained, but which had not been manured for a year. They received no artificial manure or adventitious stimulant of any description. The growth of the "shaws," considering the very unusually dry summer, was remarkable. It reached to seven feet in length: and to save the bloom, and observe the length to which the "shaws" would grow, I had them staked up like garden peas; and the total length of many of the shoots was seven feet or thereby, with a most healthy dark green appearance, but little bloom. As I had occasion to use the ground, the Potatoes were cleared off on the 8th October 1869, having been exactly four months, all but one day, in the soil; and upon weighing the net produce of fair-sized marketable Potatoes, we found it to be fifty-seven pounds weight! Several of the Potatoes were three pounds a-piece. One was three pounds and a-half, and they were all, I should say, above the average of this year for this variety. I ought to add that the original weight of the two tubers from which the foregoing very prolific returns were obtained was fully a pound and a-half each.

I consider that the Potato ("*Cattle Feeder*") is most appropriately named; is very prolific; and contains apparently a very large proportion of Saccharine and Starch. If its length of shaw proves in other instances at all equal to what it proved in my case, it must be a capital "*weed killer*," as well as "*cattle feeder*."—I am, Sir, yours respectfully,

ROBT. HUTCHISON.

In the spring of the present year I obtained one Bovinia Potato, weighing one pound, from Messrs Carter & Co., of High Holborn, and cut it into 19 sets. Fourteen of the sets were planted March 23, and the remainder April 2. They grew amazingly, and by the end of September the haulms were five or six feet long. The Potatoes were lifted October 20, when I had the astonishing crop of 133 lbs. The six largest and best roots weighed 59½ lbs., and one root weighed 13 lbs; 11 roots weighed 27 lbs., and the largest of these 4 lbs. They were grown on a clay soil. I had the ground well manured and a little sand spread over it. The flavour of these potatoes is excellent.

Appleton-in-Widness.

R. L. B.

D TUBER OF PATENER POTATO.

TIME AS TURNIPS.



*The Prize Medal at the Wigan Show held at Wigan in September 1870; and the first Cup ever
at the Berks Show, 26th November 1870—one of them, Paterson's Bovinia
received a Silver Medal at the Manchester and Liverpool Agricultural Society,*

PROPOSES,

Introduce a large amount of farinaceous matter; grows the enormous quan-
tity of 20 extra culture 40 tons per acre have been grown, and many of the
tubers would be allowed to remain, well covered with straw and a light
be taken weather. The reason that particular care is required in storing
coating of the Bovinia apart, 10 inches deep, and plant from 20 to 22 inches from
set to set. Singularly enough, sheep have never been known to be
starved to of this Treatise.



FIELD LIFTING OF POTATOES.

THE harvest work of a farm cannot be said to be finished before the Potato crop is taken out of the ground and secured from the winter frost. Potatoes generally indicate their fitness for being lifted by the decay of the haulms; but the early and late varieties should all be lifted by the end of October. Various methods are followed in lifting them. One method is with the hand by means of a Potato graip; another is with the double plough, splitting the drills in the same way as they were set up, which is the cheapest and most expeditious of the two. However, it is the opinion of many that the graip mode of lifting more thoroughly cleans the ground of the Potato. But of late years a new Potato digger has been introduced which is likely to supersede all the former methods of the field-lifting of Potatoes. This machine has a set of revolving forks with flat prongs, which throw the Potatoes and dirt against a strong netting stretched on a frame on the right hand side of the machine, and the body of the soil in the drill, including the crop, is lifted and prepared for the forks by means of a long share which passes transversely underneath the drill, and can be lowered or raised to suit any depth at which the Potatoes may have been planted. Mr Oliver has made what he considers an improvement on the share, by giving the cutting edge a greater dip than it originally had, which seems to prevent it from cutting the Potatoes. He also recommends that each digger should be provided with a spare share, in case of anything going wrong with that which is at work, so as to prevent loss of time in getting repairs done.

The frame in which the working parts are fixed is supported in front on a pair of wheels. The gatherers follow the digger, each provided with a basket such as was used at the planting; and as soon as the baskets are filled they are taken and emptied into the carts, loosened into a convenient part of the field to receive them. In light and easy soils the Potatoes are easily and quickly gathered. It is a beneficial practice for a worker to go before with a small graip, clearing the haulms out of the way. The smallest Potato should be gathered, not only for the sake of economy, but for removing them from amongst the succeeding crop. The gathering should not be continued late in the evening, as the Potatoes cannot be seen, nor should they be taken up in rainy weather; and if there are more kinds than one in the field, great care must be taken not to mix the different varieties—not even the gatherings, as it causes great waste, it being almost impossible to separate them if mixed. When farmers lift Potatoes for their own use they are generally pitted; if not pitted, they are bagged off the field. If properly ripened, bagging may do very well, otherwise the skin gets ruffled in transit, which spoils the look of them. When Potatoes are taken up with the graip the prongs should be flattened at the points, when there would be less chance of the Potatoes being punctured. Men should be employed, it being rather heavy work. The graip should be inserted at the side of the drill and below the Potato with a push of the foot; the earth is turned right over into the drill, from whence they are gathered and removed as directed above.

ON STORING POTATOES.

THE object in storing or pitting Potatoes is to protect them from frost and wet. You are all aware that a frosted Potato becomes soft and of a sweet, unpalatable taste. This taste is succeeded by a sour taste, owing to the sudden evolution of the acetic acid, which causes the esculent to pass into putrefaction. There is no difficulty in protecting them in the early part of the season. There is no better system of storing and keeping

Potatoes over the winter than that of putting them into what is called "Pits," or "Clamps," the pits being either of a conical or prismatic form. The conical form suits best on small farms and for small quantities; the prismatic for storing large quantities. For both forms a dry, well-sheltered situation should be chosen, and if possible protected from the north winds. They are best on a sloping situation, so that the rain may run off. The

site should be conveniently chosen, so that carts can have free access, and as near the steading as possible. A conical pit may be about five feet in diameter, and four inches deep. Pile up the Potatoes to a cone from four to six feet in height. If the Potatoes are very clean lifted, it is a preventative from their heating to throw a quantity of moist earth amongst them; then cover up with a clean thatching of very dry straw. The earth is dug round the pit with a spade in the form of a trench, about as far from the pit as you mean to make the thickness of your covering. Begin to cover up at the bottom, covering as you go upwards about a foot thick; thus spadeful after spadeful is taken from the trench and heaped on the straw, until you reach the top of the pit. The top should only have a straw covering for some time, so that the steam of the Potatoes may evaporate from the opening left at the top. The prismatic or long pits are formed exactly the same as conical pits, with the exception that the Potatoes are piled in straight lines, running south and north, having sides and ends 4 inches deep and $3\frac{1}{2}$ feet wide and 20 yards long. The height of the piling of the Potatoes should not exceed $3\frac{1}{2}$ feet at the top of the ridge. Such a clamp is estimated to hold about 5 tons. The pit should then be thatched with a thick covering of dry wheat straw. It has been found that when fresh gathered Potatoes are heaped together, a certain degree of heat arises; and as the covering of Potatoes may be the means of retaining the heat thus evolved, it has been suggested either to leave the top ridge open or to have straw chimneys of upright straw at intervals, before the earth is thrown up and beaten down. It is almost impossible to explain the different effects that the same mode of pitting produces now that it did 40 years ago. Then, though the pits were ever so long or so large, and cut sets heaped ever so high on the barn floor, not a word was heard of heat failure. If the conjecture is true that the failure in Potato is ascribed to the ordinary method of pitting, it is quite evident that some change has come over the Potatoes themselves, since there is none in the method of pitting. We all inquire why Potatoes go wrong in the pits and cut sets heat in the barn floor, when such effects were never seen nor heard of before. Has chemistry nothing to do with it? It is well known that land which has never been cultivated and moss land are the soils most productive of Potatoes free from disease. Bear in mind, it was only in the beginning of the last century that Sir

Humphrey Davy called the attention of agriculturists to the fact that the land became exhausted by continual cropping, and that something should be done in the practical application of chemicals to the land; but it is only little more than thirty years ago that Professor Liebig called the attention of agriculturists to the application of artificial manures. I do not positively mean to say that this has been the cause of the disease in the Potato, but I can safely say that since said application disease has appeared less or more. Artificial manures no doubt increase yield, but if you wish to practise a preventative for disease, use farmyard manure. But the adoption of a safe change in practice should not induce us to neglect the circumstances that cause the change, nor content ourselves with secondary causes, although a remedy may seem hopeless. The connection between manures and the Potato disease is not so easily traced as in the case of soils, where no doubt exists as to the cause of discordant statements. The circumstances under which the trials have been made have not exactly been the same, and consequently the results have been different. The conclusion of the whole matter may thus be summed up—That over-luxuriance, arising from whatever cause, was an incitation to the progress of disease. My belief is that if agriculturists wish to aid in checking the virulence of Potato disease, they ought to content themselves by leaving off the chemicals, and, as before, use well-prepared farmyard manure, with a top-dressing of guano; and although such a method of manuring may not produce the large returns which are at present derived from Potatoes, they must dispense with such large crops for the sake of again securing, as in former years, a pleasant constituent of the dinner table. I am sure overgrown Potatoes forced with putrid, putrescent manures are as unpleasant to the taste as they are precarious to the purse. Had farmyard manure been other than a compound containing all the ingredients of the produce raised on a farm, many more failures would have actually occurred. They, under various chemical changes, chiefly while circulating, are prepared and fitted for entering, when and where it is necessary, into composition of the solid or fixed parts of the plants. Thus the starch of root is changed into the soluble sap and sugar of the plant. They each exercise a chemical action on the other elementary bodies which they meet with in the stems or wood as the plant grows.

But, however easy it may be to apply manures after the component parts of plants and soils, as long as the limited knowledge of these particulars exists, manures must continue to be applied in the same manner as they have been in olden times, with such gradual improvement as inquiry and progressive experiments may direct.

In the improved existing state of agricultural knowledge, it seems incredible to the practical farmer that, after all the trouble and expense he has incurred in procuring the best newly constructed implements to bring the

land to the highest degree of cultivation suited to the particular crop it is destined to grow, and after the expense of purchasing the large quantities of home manure which he directly lays on the land, besides the money he expends on purchasing auxiliaries to be used as top-dressing on the growing crop—after all this toil and expense over a great part of the year, it seems incredible to him when he is told that it only secures a proportion seldom over 5 per cent. of the crop he has reaped, while the other 95 per cent. has been produced from the atmosphere alone.

REPORTS.

PATERSON'S FAMED SEEDLING POTATOES

HAVE been grown this season by the Queen's command at the Royal Gardens, Windsor, and favourably reported on by Mr Ingram; as also by the leading Agriculturists and Farmers throughout the country and on the Continent, with entire satisfaction; and, amongst many others, by the following Noblemen and Gentlemen:—

From THOMAS INGRAM, Esq., Royal Gardens, Windsor.

November 24, 1866.

I have grown several kinds of your Seedling Potatoes, and have great pleasure in stating that they have turned out well, especially the Victoria, which is very prolific, and of excellent quality. I had much pleasure in showing the Queen your fine box of Potatoes last autumn. Her Majesty desired two of each kind to be sent to the Castle—one kind to be daily cooked for Her Majesty's approval. The Victoria is one of the best in cultivation, less subject to disease than most kinds. Paterson's Early most useful for frames or early borders, very good cropper. Paterson's Régent one of the finest, excellent cropper, and fine quality. Seedling Rock very good, slightly diseased.

From Messrs HOOPER & Co., Covent Garden Market, W.C., London.

21st Nov. 1866.

We are pleased to add our testimony to that of others in favour of your excellent stock of Seedling Potatoes.

Having sold a large quantity, and distributed them in every part of the United Kingdom, we are gratified in being able to state that almost all reports that we have received from our customers have been most satisfactory—in some cases *highly flattering*.

From Sir JOHN OGILVY, Bart., M.P. for Dundee.

*BALDOVAN HOUSE, DUNDEE,
16th Dec. 1864.*

GENTLEMEN,—I never saw finer Potatoes than the Victoria Seedlings which you sent me. The Napoleon was also excellent, but I gave the preference to the Victoria. I understand, however, that the Napoleon improves in quality as the season advances. This, if the case, will add much to its value.—Yours faithfully,

JOHN OGILVY.

Report from Messrs ALEXANDER CROSS & SONS.

GLASGOW, 11th Dec. 1864.

We tried most of your sorts of Seedling Potatoes this year. They did very well, in

every case producing large crops. We were particularly pleased with the Paterson's Early and Paterson's Regent, and your Victoria is a very excellent Potato. We have no doubt next year you will have a large demand.

ALEX. CROSS & SONS.

PATERSON'S VICTORIA POTATO.—A customer of ours (N. J. Easterbrooke, Esq., of Hayle, Cornwall) says concerning this splendid Potato:—"It is the best Potato yet grown in the West of England. The 5 cwt. you sent me were at once planted in well prepared ground, and occupied a quarter of an acre. Hundreds of persons called to see their beautiful foliage and blossom. The produce was 75 cwt., out of which there was only $\frac{1}{2}$ cwt. of waste, all doing for table or prime seed. I have saved all the lot, and shall plant about $3\frac{1}{2}$ acres this season. I feel certain that, had the whole piece been dressed as I dress for Flukes, there would have been a much greater produce."

HOOPER & Co., Seed Merchants, Covent Garden, London, W.C.

Report on Paterson's Seedling Potatoes, as grown in 1865 at Highfield House Observatory, near Nottingham, by E. J. Lowe, Esq., F.R.A.S., F.L.S., &c.

Paterson's Blue yielded $43\frac{1}{2}$ lb. for each lb. planted.

Alexandra Blue yielded $50\frac{1}{2}$ lb. for each lb. planted.

Paterson's Regents yielded $29\frac{1}{2}$ lb. for each lb. planted.

Scotch Blue yielded $27\frac{1}{2}$ lb. for each lb. planted.

New Perthshire Red yielded $25\frac{1}{2}$ lb. for each lb. planted.

Paterson's Red yielded $25\frac{1}{2}$ lb. for each lb. planted.

Victoria yielded $22\frac{1}{2}$ lb. for each lb. planted.

Seedling Red Rock yielded $28\frac{1}{2}$ lb. for each lb. planted.

Paterson's Early yielded $21\frac{1}{2}$ lb. for each lb. planted.

Forfarshire Red yielded 23 lb. for each lb. planted.

Irish Blue yielded 26 lb. for each lb. planted.

Early Albert (white oval) yielded $19\frac{1}{2}$ lb. for each lb. planted.

Blue Kidney yielded 37 lb. for each lb. planted.

Very Early Red Kidney yielded $20\frac{1}{2}$ lb. for each lb. planted.

Napoleon yielded $15\frac{1}{2}$ lb. for each lb. planted.

The yield of Paterson's Seedlings has been extraordinary. With these Seedlings were planted 55 other varieties, and, with the solitary exception of Racehorse, the yield was so far below Paterson's Seedlings as not to be compared with them.

From T. BOWICK, Esq., Bedford.

BRITANNIA FARM, BEDFORD,

9th Oct. 1865.

Respecting Potatoes, we have just harvested 40 acres (which are all consumed in London ere this)—all partially diseased. Crops large. Your varieties were especially good. Victoria is very fine—the finest Kidney I know.

From Mr THOMAS PIERPOINT, Warrington.

27th December 1866.

The Potato crop in this neighbourhood is generally diseased, more or less, and up to the present time the disease continues its ravages. I may say respecting your Potatoes, everyone who has had them is satisfied with the trial, and speaks highly of Victoria, Regent, Fluke, Paterson's Early, and Paterson's Red.

From JOHN H. CHAMBERLAIN, Esq., Leverington, Wisbech.

23d Nov. 1866.

I grew your Victoria Seedlings on a very poor piece of land this year, and on taking them up found they were well grown, very few small ones, and so few diseased that the number is not worth mentioning. I have now a nice quantity for planting next season, and hope I shall be able to make you a favourable report as to produce per acre and price at market.

Report by the Inspector of the Royal Gardens, Berlin, to the President of the Society of Agriculture, anent Paterson's Seedling Potatoes.

BERLIN, 27th November 1869.

MR WILLIAM PATERSON, Dundee.

After his Royal Highness has had the kindness to send you different sorts of beautiful Potatoes to the President of the Society of Agriculture, they were, at your request, handed to the Royal Garden Inspector, M. Bouche, to try a planting of the same.

Enclosed I send you exact copy of M. Bouche's opinions of same for your information. (Signed) VON SELCHOW.

Report referred to.

To His Highness Herr VON SELCHOW,
President of the Society of Agriculture.

Sir,—I hereby take the liberty of communicating to you the result of the planting of the three different sorts of Potatoes which I got on the 28th June 1869, and which William Paterson had sent to His Royal Highness the King of Prussia. All three sorts are not quite new, as they have already been cultivated for some years in our country, but they are without doubt the best specimens which in later years have been produced from the seed.

Mr Paterson, who has occupied himself very much with the culture of new sorts of Potatoes, has, in planting and transplanting them, got a great deal of different sorts of splendid Potatoes, and for which great praise is due to him.

The three different sorts sent—viz., Victoria, Napoleon, and Blue—are without doubt the best, especially the Victoria Potato. This sort is most to be preferred for our country, it being a middle early sort, and therefore ripens in good time, gives many folds, keeps till the middle of July as a good tasting and flour rich Potato; and although it is of the previous year, is preferable to the new and fresh six weeks' Potato.

Although the time for planting was long past when I got them, I still got a good result of them. The Napoleon Potato has given $\frac{3}{4}$ metz; the Early Blue 2 metz; and the Victoria fully 2 $\frac{1}{2}$ metz. The nuts of both sorts first mentioned are only small, but on the Victoria have grown larger. (Signed) BOUCHE.

PATERSON'S SYSTEM OF PROPAGATING SEEDLING POTATOES.—At a meeting of the Highland and Agricultural Society held on Wednesday, the following communication was read from Mr Henry Stephens, the author of "The Book of the Farm":—

"Redbrae Cottage, 9th Dec. 1868.

"Gentlemen,—Allow me to direct your serious attention to a subject which materially affects the interests of the farmer and of the community. The subject I refer to is the propagation and establishment of good and sound varieties of the Potato from the seed. A very successful instance I will take the liberty of bringing under your notice.

"Mr William Paterson, of Dundee, was initiated in the art of gardening by his father,

who for many years supplied vegetables to the inhabitants of that thriving town. He commenced business on his own account in the fruit trade, and has the best fruit shop in Dundee.

"At the period of the Potato failure, observation and reflection impressed his mind strongly that decay in the constitution of the Potato plant, occasioned by a forced culture of long continuance, and the incessant employment of the tuber itself as the means of reproduction of the crop, were the superinducing causes of the disease. Such a conclusion was doubtless a rational one. With this conclusion strongly entertained, Mr Paterson endeavoured to procure everywhere samples of the soundest Potatoes, in order to obtain therefrom seed from the apples, as also seed imported direct from South America. Thus provided, after much toil, waste of time, and expenditure of money, he has succeeded in producing some excellent varieties of Potatoes in a course of twenty years of unwearied perseverance and anxiety. We are all sensible of what the difficulty must have been of selecting the best out of the hundreds of varieties of tubers which are produced but from a few seeds of the Potato plant, the number of years required ere the selected plants produce such a size of tuber as can be presented at table, and a still further course of years ere those tubers can adequately supply the markets of the country with the favourite Potato. It is, therefore, not surprising that, attaining even success, Mr Paterson has incurred heavy pecuniary loss, as well as loss of time, which might, perhaps, have been otherwise more profitably employed. Having no land of his own, he had to rent land, to pay for manures and hired labour, and to wait for years before he had a chance for remuneration from his experiments.

"I am furnished with a detail of many of these experiments, and with numerous testimonials from all quarters of the kingdom in regard to the prolificacy and superior quality of the Potatoes which Mr Paterson has thus produced.

"Having a knowledge of these facts, his friends in Forfarshire have resolved upon bestowing on Mr Paterson some recompense for his patriotic exertions, and I understand the Earl of Dalhousie has headed a subscription with £50. The gold medal would be a gracious mark of the Society's approval of his efforts; and by the Society thus giving encouragement to the movement, the country generally might more readily be induced to support it.—I have

the honour to be, Gentlemen, your obedient and faithful servant,

(Signed) "HENRY STEPHENS.

"To the Directors of the Highland and Agricultural Society of Scotland."

The Secretary was instructed to inform Mr Stephens that Mr Paterson should transmit a report on the subject, when, if approved, the gold medal may be awarded.—*From the Dundee Advertiser, January 8, 1869.*

From Professor BALFOUR, of the Edinburgh Botanical Gardens.

BOTANICAL GARDENS, EDINBURGH,
9th November 1869.

Mr W. PATERSON.

My Dear Sir,—The two tubers you sent me, called the Bovinia or Cattle Feeding Potato, we planted 1st June in the Botanical Gardens. They were dug in October, and we found the tubers large and the produce abundant, which is something wonderful, considering they were only four months in the ground. Your Victoria Potatoes are excellent.—Yours, &c.,

Professor BALFOUR.

HINTS ON POTATOES FOR THE HOUSEHOLD.

HOW TO MAKE POTATO STARCH.—It has been suggested to me, now that we are again threatened with a Potato famine, that I should give publicity to a method for utilising the diseased tubers. The method is simple in itself. All that is required is simply a grater, such as carrots are grated with, a basin or tub, cold water, and a fine sieve; but it depends on the fact that the starch of the Potato is not affected by the disease, but retains its nutritive properties. First, wash the potatoes free from earth, but don't peel them, and then proceed to grate them down in a basin or tub of cold water. In a few minutes the starch or farinaceous matter will sink to the bottom. The diseased wood fibre will float on the water, and should be poured away with it. Fresh water should then be added, the starch again stirred up, and again allowed to settle. Two or three such washings will remove all impurities, and leave the starch beautifully white; or you can strain it at once through a fine hair sieve, which saves time in washing. Then dry in the sun; and if thoroughly dried, will keep good for years, and can be used as food for children instead of arrowroot, or as pudding, cakes, or custards, and if mixed with flour make fine bread.

POTATO CAKE.—Take fine large potatoes. Boil, peel, and mash them. Then rub the mashed potatoes through a sieve. To each potato allow a pint of sifted flour, a tablespoonful of strong fresh yeast, a gill of milk-warm water, saltspoon of salt, the yolk of an egg, and a bit of fresh butter about the size of a small walnut. Mix together in a large broad pan the flour, the mashed potato, and the salt. Make a hole in the centre of the mixture, and

pour into it the yeast mixed with the warm water. Sprinkle a little flour over the top, and mix in a little from round the sides of the hole. Cover it with a clean towel, and over that a flannel, and set it near to the fire to rise. When the dough is quite light, and cracked all over the surface, knead in the butter and also the yolks of eggs, having beaten them well, and add a small teaspoonful of soda dissolved in a little warm water. Then divide the dough into equal parts, make it into long-shaped rolls, and lay them in a tin or iron pan sprinkled with flour. Cover them, and again set them to rise in a warm place. When perfectly light (which should be in about an hour), set the pan into the oven, and bake the rolls brown. They are best when quite fresh. Pull them open with your fingers, and eat them with butter.

POTATO LEAVEN.—The following is copied from the original specification in the Patent Office, London:—"To make a yeast gallon of this composition, such yeast gallon containing eight beer quarts, boil, in common water, eight pounds of potatoes as for eating; bruise them perfectly smooth, and mix with them, while warm, two ounces of fine honey, and one beer-quart of common yeast. For making bread, mix three beer-pints of the above composition with a bushel of flour, using warm water in making the bread; the water to be warmer in winter than in summer, and the composition to be used in a few hours after it is made; and so soon as the sponge, or the mixture of the composition with the flour, begins to fall the first time, the bread should be made and put into the oven."

POTATO BALLS (REGENT) are also made of mashed Potatoes, by adding grated ham tongue, minced parsley, onions, pepper, salt, a bit of butter, and a little of any flavouring ingredient suited to the dish they are to accompany. Small Regent balls of Potatoes form an agreeable addition to open fish pies.

POTATO FRITTERS (SCOTCH).—Parboil waxy, long-shaped Potatoes (Paterson's Bovinia), dip them (sliced) in egg, bread crumbs, and rasped ham, fry in plenty of dripping, and serve with any steak or chop, or alone, as a supper dish ; or they may be dipped in fritter butter. This cheap and delicious mess was wont to be furnished in summer to those healthy and happy children educated in what was called "The Maiden Hospital of Edinburgh."

MASHED POTATOES.—Wash and pare the Potatoes, and boil with salt and water, and, when poured, put them over the fire without a cover for a few minutes ; add butter, salt, and a little milk or cream (the less the better, unless they are to be eaten with milk, as it makes them moist and doughy) ; mash them smooth with the Scotch Potato beetle, or with the patent Potato crumper or bruiser ; then dish them neatly ; score in diamond or sippets, and brown them before the fire ; they are also pressed through a culender and heaped up in lock-work flakes on the top before browning. After the month of March Potatoes ought all to be pared before boiling, whether for mashing or served whole.

THE BEST METHOD OF COOKING POTATOES.—Some humorous writers pity those people who lived before the publication of the Waverley Novels and the introduction of the Potato. That root of superlative excellence and undoubted utility has now taken its place on every dining table or stool in the three kingdoms, and gone far to equalise the dining enjoyments of every grade of society. There are a great many varieties of Potatoes, and fully as many ways of cooking them ; but when all ways are tried, simple boiling is found about the best way. New Potatoes, just ripe, fresh dug, well washed, and suited in size, should be boiled in hot haste, with scanty water, changed once at least, with a little salt, and in a pot to which poverty denies a close-fitting lid. As soon as they are ready the water is poured off ; a few minutes more of the fire evaporates all moisture and completes the cooking ; and there they lie, smoking hot, mealy and flaky,

bursting from their coats in such guise as they are seldom seen on the tables of opulence. Potatoes ought to be eaten as soon as they are boiled and *dried*. If they must stand, let it be by the fire in the *pot*, and only partially covered, so that the steam may escape as it rises. A piece of coarse calico should be laid over the potatoes in folds, and the pot-lid on its edge on the top of it. This method will absorb the moisture and keep them hot a long while. Young Potatoes ought to be fresh dug when cooked. Very little boiling will cook them. The water does to be boiling before the Potatoes are put in. Add a little salt. They may be served with a little butter in the dish.

POTATO PIE, made after this recipe, from the pen of a first-rate cook, will be found on trial capital ; we have tried it :—When what may be called the available meat is taken from ribs or sirloin of beef at the table, there remains much on the bones that will make a good dinner by using as follows :—Pare the meat off the bones, break the latter and put them in a pan, cover with water and let boil for several hours, replacing the water as it wastes, taking care not to have much more than half a pint of gravy in the pan when required. Pare and boil with nearly as many Potatoes as the family will require ; make a paste of flour and dripping, a little salt sufficient to cover the dish to be used ; roll out a part of the paste, and cut into narrow strips ; wet the edge of the dish, and put on the strips of paste ; cut the Potatoes in bits, and put in the dish, which should be a deep one ; season to taste with pepper and salt, cut the meat in small pieces, and put it on the top of the Potatoes, put in a teacupful of the gravy from the bones, roll out the remainder of the paste the size of the dish, wet the strips round the edge, and put on the cover, pressing down with the thumb to make the two adhere together ; pare the paste neatly off round the edge of the dish, wet the strips round the edge of the dish ; make a ball the size of half an egg with what is pared off ; cut half-way through to form a cross, fix on the top, in the centre ; bake in a brisk oven an hour or longer, according to size, taking care the paste does not get burnt. When baked cut the cross neatly out, and pour in the gravy by means of a sauce boat, replace the cross, and send to table. If the flavour of an onion is liked, one can be peeled and shred fine, and added at the time the pie is being made.



A DIALOGUE ON PATERSON'S SEEDLINGS.

SOME time ago, an English agriculturist of no small note visited our Dundee Corn Market. In the course of conversation, he remarked to one of our district farmers, of equal importance, that he understood there was a famous grower of Potatoes in this quarter. The farmer remarked—"Hoot, aye, man, that'll be the famous Willie Paterson, who owns that braw shop at the tap o' Union Street. Sure enough he has done mair for the 'Taties than any ither man livin'. I have kent him ever since I kent mysel'—mair than forty years—fechtin' and raisin' them from the plum seed; and frae that seed he has raised thooasands o' kinds, of a' sizes, shapes, and colours. By the bye, sir, you'll be a buyer o' 'Taties'?"

ENGLISHMAN—"Yes, I might be a buyer, if I could pick up some good kind."

FARMER—"Weel, you're just in the richt quarter, and, as I said afore, Paterson has raised a' kinds and colours o' them; but it would be clean oot o' the question for me to mooband the crackjaw names he has gi'en them. Paterson's Seedlings used to be a standing *joke* amang us farmers, I frankly admit, but I assure you they have been no joke. Mr Paterson persevered until he made us farmers a' converts. However, some o' oor *great* Lords, stupid fools, in face o' a' thing, say that Paterson never did onything for the guid o' the Potato."

ENGLISHMAN—"Indeed! like enough, if they look round them, they cannot but change their mind."

FARMER—"Nae doot o' that; but 'Tatie diggers are o' mair consequence wi' some o' them than the 'Taties. But we hae gane aff the story. To begin again whaur I left aff—Some o' Paterson's 'Taties are as lang and

thicker than yer fit, and heaps o' them 7 lbs. weight. They grow red and white 'Taties at ae shaw. That kind is named the 'Bovinia' 'Tatie. Another wonderfu' ane he ca'd the 'Victoria,' after Her Majesty. Nae doot, ye hae seen that 'Tatie'?"

ENGLISHMAN—"I have; a fine, white, flat Potato; grows few small ones."

FARMER—"Just exactly. Weel, ye ken, Paterson was an awfu' man for perseverance. He took it into his head to send samples to the Queen, and what do you think? Her Majesty was so pleased wi' her name-daughter that she wrote a letter wi' her ain hand to Paterson about them, and ordered Mr Ingram to plant the fine samples in the Gardens at Windsor. There was nae word o' the famous 'Albert' 'Tatie at that time, but I'm sure that it'll no be ony news to you, for a' England ken't aboot that honour."

ENGLISHMAN—"I believe we did hear of that honour; but I doubt much if it filled his pockets?"

FARMER—"Weel I wat no; it has been naething but a dead lock. Our big wigs about the toon here got up what is ca'd a testimonial for him, but the poor man was never applied to. But they ought to be ashamed o' their testimonial."

ENGLISHMAN—"No doubt of it; it was a complete disgrace to the British Nation. Do you know if the importance of the matter was ever represented at headquarters?"

FARMER—"Weel, Sir, if I mind richt, there was some sham affair got up in the shape of a petition, but, like a' the rest, it didna gang the length o' the Queen. Sure enough, it really is a matter o' great importance to the nation at large, as bearing directly upon a question which has engaged the earnest atten-

tion of the statesman an' the philosopher, and which in the case of disease has decidedly ignored science to find a remedy."

ENGLISHMAN—"Shameful! But, friend, as yet you have not informed me what kind of plum these new Potatoes were raised from? Was it the *Blue Orlin Plum*, or was it the *Magna Bonum Plum*?"

FARMER—"The guidness preserve me, man—Sir, I should say—yer just aboot as bad as I was. I am sure, from your dandy appearance, one would hae thought you would hae been better versant in the Nation's events than to speer sic a question at me. But, gently, atween oor'sels, and to mak' sure aboot the plum seed, I just walked mysel' into the back shop at the tap o' Union Street, without ony ceremony, and there I found Mr Paterson sittin' on a chair, wi' his feet on the table. 'Weel,' I says, 'it's a fine day, Mr Paterson.' He answers, 'Yes.' 'Weel,' says I, 'I have just come in to speer what kind of a plum tree you got the new 'Tatie seed aff?' 'Weel, friend, is that a' ye ken aboot it? They were not so easily got, I assure you, as off a plum tree. Ye're just aboot as ignorant as the swine ye feed. Go home, and not make a fool o' yourself, and look at your Victoria field, and you will see the plums on the Potato shaws by the cartload—yes, seed that will be a national benefit after you and I am gone.' 'The goodness preserve me, friend! how can that be? How can you get the seed out o' yon things?' 'Aye, that is a job for you. Go down to my wife, and she will tell you all about it, for I have no time to be hindered just now. Don't send any more of these swine in here, Mary.' 'No, William—no, Willie; what did I ken?' 'Well, Mary, you always ken very little.'"

ENGLISHMAN—"Now I quite understand it was from the plums that grow on the Potato haulms that these Potatoes have been grown; but where did he first get them from?"

STEAMING POTATOES is recommended by the critical writers upon the subject of cooking; and certainly where Potatoes must be cooked on a large scale, it is exceedingly convenient; but, as far as my experience goes, I will venture to affirm that the crude, rank, deleterious juice which makes Potatoes so unfit for food in their raw state is never so quickly nor so effectually extracted as by rapid boiling. The partial failure of the Potato in 1845, and the subsequent more general or almost universal failure of this favourite esculent, drove all classes to strange shifts to find substitutes.

FARMER—"Aye, just so—that's it. I believe he had a bonny job; but there is nae doot he managed that."

ENGLISHMAN—"Then what about that famous Prince Albert Potato?"

FARMER—"What about it? Oh, it's a coloured-skinned Regent-shaped 'Tatie, with flesh as white as paper; but you Englishmen, because it has a blue skin, are fear'd at it; but ye are in an awfu' mistake, for a finer-flavoured 'Tatie cudna be. Ye'll ken what vegetable marrows are? Weel, it has just the fine taste o' them; but it's opposite to the Victoria (ye'll ken it's a white 'Tatie), for it bears neither flowers nor plums, so it will beat any one to get new kinds aff it; and it was thought proper to name it Prince Albert, after the Queen's husband, and I assure you it deserves the name. It does to be planted at a' seasons and in a' countries (not like Napoleon, sir, for, as the sang says, it does best in France), and canna be beat as a cropper. I have grown as mony as 26 big 'Taties at a shaw; and, when boiled, they cast their jackets, just as the 'Taties did before disease seized on them, and made them wet and clammy and ill-tasted. But, friend, as it is scarcely possible to expect you to believe about thae 'Taties, and if you hae ony scepticism aboot them, you must just pay me a visit at Millhole, and you will get your e'en opened on a sight, for my 'Tatie fields just enoo are mair like fields o' geraniums and rhododendrons. They are the clean crack o' the country."

ENGLISHMAN—"Well, thank you, I will pay you a visit, as I am desirous to see some of Paterson's New White Fluke Kidneys, so highly recommended to us English growers."

FARMER—"Goodbye, then. I'll be expectin' you some time next week, and I'll hae my whisky bottle filled, so that you may get a drap o' our mountain dew."

However, neither the cook nor the Potato lover succeeded. Boiled chesnuts, mince macaroni, parsnips, Portugal onions, stewed or roasted, different kinds of beans and peas, mashed white cabbages, carrots and turnips mashed, sour crout, many preparations of Indian corn or maize meal, the old Yorkshire pudding dough-nuts and dough-boys, and the old plain flour or oatmeal dumplings of our Scotch ancestors, were all resorted to, only to be thrown aside for a dainty dish of Paterson's Alberts or Victorias.

LINES WRITTEN ON POTATOES

AFTER READING MR PITBLADO'S REMARKS ON PATERSON'S SEEDLING VARIETIES.

In this bright age, when sage and seer
In wisdom tak' the lead,
An' progress whispers in the ear
O' mortals—Go a-head—

I now wad say, get on wi' glee,
But look before ye leap,
And learn in time, whaure'er you be,
To sow that ye may reap.

Your duty do wi' earnest face,
There's dignity in labour;
A man may benefit his race
Without a gun or sabre.

Well, by the way of benefit,
I something here wad mention—
A root or plant for people fit,
Well worthy o' attention.

I kenna when it first was reared,
But sin' the days o' Plato
Nae esculent has yet appeared
To beat the real Potato.

An' as amang the sma' an' great
We've men o' different minds,
So wi' Potatoes, I may state,
We've them o' different kinds.

Yea, ilka kind your notice claims,
They'll rear on height or howe;
An', as some o' them hae great names,
I wish them great to grow.

To tell ye a' the kinds to tak'
I needna here insist;
Yet for your sakes, on white an' black,
I'll name a sma' bit list.

Victoria, a Royal name,
Deserves the foremost chance;
Napoleon, too, puts in a claim,
But he is best for France.

There's Emperors and Regents gude
That men o' skill might choose,
An' Seedlin' Rocks, nice Perthshire Reds,
An' bonny Irish Blues.

Thae kinds hae to the test been brought
By process scientific;
An' if ye plant them as ye ought
They'll turn out quite prolific.

Sin' ere the sad disease began
Our country suffered sore;
Then let us do whate'er we can
The blessin' to restore.

To Paterson & Son be praise,
Weel may the firm agree;
An' mony gude crops may they raise,
An' flourish in Dundee.

An' a' the puir in that braw toun,
Born under adverse planets,
Feast aff a guid Potato boon,
An' wave wi' joy their bannets.

Now here a thought suggests itsel'
Anent the Stirling folk—
The Seedling Rocks might answer well
The gude sons o' the rock.

Then on the waters cast your bread,
To do duty be ye summoned;
Fix on a man to yoke the trade—
Say pious Peter Drummond.

He'd mak' the business prosper well,
If he as agent acts;
He'll find that 'Taties dry will sell
Far better than the tracts.

Let's cultivate the precious root
In garden and in fiel',
That honest folk may get the fruit
When houkit frae the drill.

Grim poortith frae the hallen en'
Potatoes keep awa',
Then may the bloom be seen again,
An' bullets at the shaw.

My blessin' on them evermo',
How leesome is their hue;
Let Scotland sing the praises o'
The Red, the White, and Blue.

Luck to the trade; may nought annoy
Its active, zealous agents,
An' loyal folks exclaim wi' joy
Victorias and Regents.

Let scope wi' cultivation gang,
Let heart an' hand be joined,
An' Paterson & Son live lang
To benefit mankind.

THE FARMER'S KALENDAR.

JANUARY.

Ploughing.—If the state of the weather and soil are favourable, push on rapidly with the ploughing. In no case take in hand the ploughing when the soil is saturated with wet.

Drainage.—When the state of the land and weather are favourable, proceed with drainage operations in the field.

Wheat Crop.—If the condition of the soil permits, proceed with what remains to be done in wheat sowing. In the choice of seed, the farmer will be guided by the locality and condition of the field.

Beans, Tares, and Peas.—In good soils and favourable situations these crops may be laid down; the beans to be sowed in drills at least 28 or 30 inches in width.

If the Turnip lifting has not yet been completed, proceed with this operation, removing the tops or shaws, care being taken not to cut or injure the bulbs in removing the tops. When consumed in the field, the produce of three rows may be thrown into one, and covered with the plough. When turnips run to seed they become useless.

FEBRUARY.

Ploughing.—A furrow of average depth should be taken if the turnip crop has been wholly removed; a shallow furrow if the turnips have been eaten off with sheep.

Wheat Crop.—Proceed with the sowing of such fields as may not yet be done; select a variety which will mature early, and with a stiff straw; steep before sowing; and apply a phosphatic manure.

Barley.—Although usually sown in March, if locality and soil are both favourable it will be worth while for the farmer to sow down a limited breadth of this crop, for it is worthy of note that the early-sown barleys are better than the late.

Oats.—Lands in good condition may be laid down in oats this month, towards the middle or latter end.

MARCH.

Ploughing.—The remarks made under the month of January as to ploughing where the land is in a fit state, apply here forcibly to the operations of this month. It should be remembered that the condition in which the soil is for seeding, and in which it is left after

seeding, influences, in a very marked manner, the after cultivation of the crop during its growth, and, by consequence, its final result.

Wheat Crop.—Little land should have to be laid down for this crop so late on in the season, the only varieties admissible where it has to be done being the April or bearded wheat and Talavera.

Barley.—The sowing of this crop should be regularly proceeded with. In selecting the seed, it is a good plan to procure seed from an early district. Chevalier barley stands highest in the estimation of brewers for malting purposes.

Oats.—Proceed with the sowing of this crop, selecting the seed of an early variety.

Beans.—Early in the month the seed should be sown if possible in drills, in order to enable cleaning and weeding to be carried on, and the soil should be well manured.

Tares and Rye, for a supply of green food for cattle, may be sown in drills.

Carrots require a deep, sandy loam, well manured with well-decomposed compost intimately mixed with it. On this account the best practice is to manure the land heavily in the autumn, and plough it with a deep rough furrow; it is then harrowed down as soon as thoroughly dry in the spring, cross ploughed, well harrowed, rolled, and, if necessary, well grubbed and rolled, so as to reduce it to the finest possible tilth, preparatory to forming the drills, which are then rolled to flatten their tops and consolidate them, and immediately sown. If the land has not been manured in the autumn, it may be manured at the time of sowing, and put in the drills as is usual for turnips. Carrots may be sown from the middle of the month up till the middle of April, but the earlier the better.

Cabbages.—Prepare a clean, rich, and well-manured piece of land, and pulverize it well, to sow some cabbage seeds; lay it off in three-and-a-half or four feet beds, with eighteen inch alleys, level the beds neatly with the back of the spade; sow the seed thinly and evenly, and cover with about an inch of fine earth from the furrows, rake the surface nicely, and when dry enough beat it well with the back of the spade, which will prevent it cracking or fissuring. The large York, Nonpareil York, and Drumhead are the best sorts to sow now for field culture, and will produce fine plants for planting out in May and June.

Kohl Rabi.—Sow early in the month on a well-manured bed seed for plants for transplanting.

Potatoes require an easy loam when well manured, but not over-manured, with compost, well mixed with the soil. This will produce crops in the highest state of perfection. The best practice is to manure the land heavy in the autumn, ploughing with a deep, rough furrow; it should then be harrowed in the early spring, or cross-ploughed and harrowed, if thought necessary. The land in many cases had better be well stirred with the grubber rather than turned over again by the plough, which plan does not expose the manure until planting time. As Potatoes have a spreading root, they require a uniform manuring, and not an instantaneous supply of soluble matter. As the useful part of the plant is produced during the latter period of its growth, consequently they require the greatest azote at the period of the development of the tubers, as they require more of that substance than the haulms. Phosphate guano or super-phosphate as a top-dressing should be adopted before the last furring up. You may continue to plant on till May; Paterson's Bovinia or Cattle-Feeder so late as June month.

Grass Seeds and Clover.—In lands sown with wheat and barley grass seeds and clover should be sown; the seed should be covered very lightly with a light bush or grass-seed harrow, or, in some soils, better still, with a light roller. Be very careful as to the purity of the seeds selected.

A P R I L .

Ploughing.—Land intended for green crops should only be ploughed where the soil is in that sound condition which will work freely under the plough, yielding a fine friable soil under the final action of the harrows. Plough lea land, and seed after the ploughing, harrowing in the direction of the furrow both before and after the sowing.

Drainage.—All the fields which are to be under crop, and the drainage of which has been begun in the preceding month, must now be finished.

Barley, Oats, and Beans.—The sowing of these crops must be completed this month, and as early as possible. A chance now lost may never come again.

Carrots, Parsnips, and Cabbage.—Carrots and parsnips must be sown this month if a good crop of each is desired. Cabbage should be planted out at distances varying from 28 to 36 inches.

Potatoes.—The planting for this important crop should be proceeded with most vigorously; the land should be in good condition, richly but not over-manured. See remarks of last month.

Mangold-Wurtzel.—Towards the end of the month this seed should be sown, in drills 28 to 30 inches apart, the same as for turnips. The crop requires heavy applications of manure, in which, if salt is given at the rate of 2½ cwt. to the acre, the crop will be all the better. The seed should be steeped in a weak solution of nitrate of soda, or even pure water, for two or three days before sowing.

M A Y .

Ploughing.—The work under this department is chiefly confined to the preparation of the summer fallows—the first operation in advanced farming being the grubbing or scarifying of the surface soil, so as to stir and bring the weeds to the surface.

Beans, Peas, Tares.—All the land under these crops should be carefully hoed and freed from weeds, and the soil brought well up over the root.

Mangold-Wurtzel and Potatoes.—Work on vigorously with the sowing of these crops, if not already completed. See remarks of last month.

Turnips and Swedes.—The land should be prepared for the turnip crop; the weeds should be got rid of as carefully as possible; the soil to be in good tilth, and well manured.

J U N E .

Ploughing.—Proceed with summer fallowing in cases where it is deemed advisable to adopt the system.

Draining.—The summer months are very suitable for carrying on draining operations in lands under grass and on fallow.

Weeding.—All the crops now in progress of growth, and which are capable of being brought under the action of the hoe—hand or horse—should be attended to. The adage is worth remembering, "One year's seeding (of weeds) is seven years' weeding."

Mangolds.—When sown at the proper time, the plants of this most important crop will be so far advanced as to admit of their being trimmed and singled. This should be done by hand; no machine can do the work properly.

Turnip Crop.—Proceed vigorously with the sowing of the turnips. "Now or never" should be the farmer's motto at this time. Some of the early sown Swedes will now be ready for hoeing, thinning, and singling.

Haymaking.—This, one of the most important operations of the year, will now—in favourable localities and seasons—be engaging the attention of the farmer.

JULY.

Ploughing and Draining.—The work connected with summer fallows should be proceeded with, and the manure applied where necessary. The drains should be finished by the latest at the end of this month.

Weeding, Hoing, and Cleaning of Growing Crops.—All the strength of the farm should be put to these important operations.

Turnips.—The plants in many of the fields sown last month will now be ready for thinning and singling.

Haymaking.—In the majority of districts this is the great farming feature of the month, "Make hay while the sun shines."

AUGUST.

Ploughing—Autumnal Culture.—In favoured districts, where some of the fields have been early cleaned of their crops, towards the latter end of the month every attempt should be made to obtain all the advantages of early cleaned and stirred fields. To obtain this object the grubber and broadshare are most valuable implements, and should be at once brought into use. In the preparation of the fallows, the land being by this time well freed from weeds, the manure should be applied. If lime or compost have been used, it will be advisable to harrow them in before finally ploughing.

Turnips.—The best opportunity for cleaning the turnip crop will be afforded this month.

Harvesting of the Cereals.—In preparing for this the grand feature of the year, the realization of all previous labours, the reaping machine, sickles and the scythes should all be put in the best of working order.

SEPTEMBER.

Ploughing and Autumnal Culture.—(See remarks under last month.) In the preparation of large breadths of land for succeeding crops, the steam plough comes into favourable circumstances where it can be economically employed. Lands which have carried the Potato crop should at once be put in preparation for the wheat crop. Fallow fields should now be ploughed, preparatory to seeding in the second week of next month.

Potato Crop.—Now begin to be lifted; if the shaws are yellow proceed to do so.

Wheat Crop.—Where the dibbling of single seeds is adopted, the wheat sowing may be proceeded with.

OCTOBER.

Ploughing and Autumn Culture.—Should the weather be dry enough to admit of the use of the grubber and the harrow, opportunity should be availed of to carry out autumnal clearing.

Drainage.—The time is now very favourable for drainage operations being carried on in fields which are cleared of their corn crops.

Potato Crops.—The taking-up and storing of root crops now demand the best care of the farmer.

The Wheat Crop.—The getting-in of this—the most important of all the cereal or grain crops—constitutes the principal feature of field work during this month.

Beans and Tares.—Winter beans may be sown this month. The mode of culture is precisely the same as that pursued in other months for the spring beans. Tares and rye may also be sown with advantage, to yield a spring crop of cattle food.

NOVEMBER.

Ploughing.—The working of the stubble fields for succeeding and spring crops may now be proceeded with on every opportunity offered.

Drainage.—A vigorous effort should be made to get all drainage operations finished before the severe frosts set in.

Wheat Crop.—Continue to sow fields not finished last month; and take in hand those which still remain to be done.

Turnip Crop.—The white and yellow turnips should be got up and stored as early in the month as possible. Indeed, for the white variety, this in many districts will be late enough, as frosts very rapidly attack and deteriorate the value of the roots. Potatoes should all be lifted and properly covered up for the winter.

DECEMBER.

Ploughing and Draining.—The ploughing of stubble land should be no longer delayed if the weather and soil are in good condition. The ploughing of lea land should also be proceeded with.

Wheat Crop.—Should the weather and circumstances of soil in previous months have been such as to prevent the wheat sowing being proceeded with, no time should now be lost.

DRAINING AND MANURING.

DRAINS.—Draining has been greatly practised, and is still very necessary. The kinds of drains used are various. In all the different methods it must always be kept in view that it will be of no use as a drain unless it is on a gentle declivity, so that the water may run away. Covered drains, if filled with stones from off the field, where that can be done, answer all purposes much better than any other. The cut is generally made about three feet deep, twenty inches at the top, and eight or nine inches at the bottom. These drains, if properly made, will never give way. They have been known to run clear for forty years. Many other modes of draining might be described, made with wood and otherwise. Recent improvements have introduced tile pipes being laid down in trenches about two feet deep; but it is necessary in all cases to have the mould so far above the pipes or stones so as the plough may freely pass without interfering.

MANURE MANAGEMENT.—The management of dunghills, though one of the most important subjects in agricultural economy, has not, till of late years, been strictly attended to. So much has been said and written by scientific men of the present day about artificial manures that I feel disposed, as an old-fashioned practical farmer, to say all I can to support the truly old conservative friend, the dung-heap, this being the residue produce of all the vegetable substances contained in the elements of food and litter consumed by the various kinds of live stock kept within the precincts of the farm-yard. The common faults in management are—allowing manure thrown out of feeding-stalls, stables, &c., to accumulate in heaps in open yards before removing to the dung-heap, whereby a valuable portion is run off and lost from exposure to the rains. Another wasteful practice consists in forming heaps by the roadside, and allowing them to lie there for months, and these even not thrown up into form, as if to get rid of a nuisance, instead of husbanding a valuable commodity by putting it in regular layers—one portion perhaps being good rotten dung, and the other mould or road earth, which is valuable as a mixture. Another very wasteful practice is that of making heaps of dung in the fields in the autumn, and allowing them to lie to be ploughed in for green crops in the spring. This plan may be a saving of work at that sea-

son, but the loss from evaporation, and the washing of the winter's snow and rains, far outweighs the economising of labour. It is therefore advisable that no other work should prevent the mixing of the manure at the proper time. There are many who expend large sums of money upon guano, superphosphate, and other concoctions of the present day, but who begrudge the labour that might be profitably expended upon the natural article at hand. It is not easy to explain when the open yard should be cleaned out, but it should be done as soon as possible after the liquid which begins to drain from it becomes discoloured. Proper management greatly depends upon the construction of the dung heap, and the condition of the materials of which it is composed; of carefully spreading and equally mixing the animal and vegetable parts of the mass; keeping cattle from treading on it; and preventing it from standing amongst water. These are the proper means for promoting an equal degree of fermentation over the whole. The careful farmer, in order to bring his dunghill to perfection, will, at the beginning of the season, form a bench at one end of the dung steading, of a breadth proportioned to his stock, and carry it up as far as easily accessible, then begin another close to the first, and so proceeding regularly over the whole course of the winter season. If the fermentation in the first benches is likely to have gone through all these different stages, which is easily known by the gradual decline, and at last final departure of the heat which more or less attends every fermentation, but which, if not observed, may lead to a state of putrefaction, thereby greatly lessening its value as a manure, carry out that part for use. If too early, put it up in a dunghill on a field. If neither of these can be done, turn over the part of the dung where the process of fermentation is completed. In the course of turning mix a bushel of salt with every two loads of dung. By this new arrangement of parts it will ferment afresh till the season come on for ploughing it in. The perfection to which the dunghill is brought by these arrangements will more than abundantly recompense any seeming additional trouble. However, I should be very sorry if it were inferred from my remarks that I wish to depreciate the value or importance of the use of artificial manures, especially guano and bone-dust; but I am of opinion that a great quan-

tity of it is manufactured rubbish. It may have a good effect in exciting the growth as a second stimulus to potato and turnip crops; but the important question is, How long will land answer to be lashed by this treatment? I will conclude by merely reminding you that it is by the preparation and application of manure that good crops can and will be raised, and just in proportion as they are applied will the agriculturist be enriched. If you want a large crop of turnips, prepare manure and apply it. If you expect a good and large crop of potatoes, manure in the previous spring or in the autumn. If you want plenty of oats, give manure in season. If you expect money, prepare manure and apply it properly, and at the proper time.

ARTIFICIAL MANURES.—The time has long gone past since the powers of some fertilising substances were ascribed to a certain unknown force. The fertilising value of manures depend mainly on the nitrogenous matters—phosphate and salts of potash—they contain. Nitrogenous matter is derived from animals, and exists largely in blood, flesh, skin, and other refuse. Animal matter and ammoniacal salts, as a rule, produce bulk, and phosphates produce quality; the aim ought to be to secure both. Men who five or ten years ago spent tens of pounds on artificial manures now spend as many hundreds, and those who spent their hundreds now spend their thousands. At present there are makers who produce from 30,000 to 40,000 tons of artificial manures yearly. Agriculturists must, if they wish successfully to cultivate their lands, spend a deal of money on manures, for the present state of cultivation necessitates the application to the soil of more fertilising agents than can be obtained from farmyard manure.

GUANO.—The fertilising value of guano depends essentially on the amount of nitrogen it contains, which is measured by the amount of ammonia it yields. Formerly it often contained 19 parts of ammonia, but at present that would be a rarity, a mighty change having come over agriculture since these days. Baron Humboldt proclaims himself the first introducer of guano to the world as a manure. He explained its advantages, published an analysis of it, and endeavoured to introduce it extensively, for forty years in vain. The first shipment of it into Scotland was discharged at Dundee, for the late David Hill, Esq., Newtyle, in 1833, and since that it has deservedly come into use. It is an improvement to mix it with common manure. Guano can be used at the rate of from 2 to 3 cwt. per acre.

SULPHATE OF LIME is a native production in the form of powder, and costs from 30s to 50s per ton, but its reputed effects are very contrary.

SULPHATE OF AMMONIA is generally a high-priced substance, and is expected to continue so on account of the high price of Peruvian guano. It is applied broadcast 1 cwt. to the acre to corn and grass crops, but the most common way of using it is mixed with composts and farmyard manure.

AGRICULTURAL SALT and **COMMON ROUGH SALT**, which always can be had at from 20s to 31s per ton, are most essential for the supply of healthy food for all plants, more especially turnips and cabbages—now so much cultivated—and others whose natural *habitat* is the sea-side.

NITRATE OF SODA is expensive by the ton, but a very active salt, and, from the small quantity required per acre, it is generally considered a cheap top-dressing—from 1 to 1½ cwt. per acre. It is sown on braided corn crops from February until May; when sown on grass land it rapidly sets up a vivid green leaf. To prevent corn crops “lodging” or “falling,” common salt is often mixed with nitrate of soda. Wood-ash and ashes from paring and burning supply an available potass to Potatoes—the food of the plant. The Americans burn timber for black ash and potass, which forms a very valuable article of their commerce.

MIXTURES OF MANURES FOR POTATO CROP.—The following are good mixtures for potatoes:—4 cwts. mineral superphosphate, 2 cwts. of muriate potash, and 2 cwts. of sulphate of ammonia per statute acre. This is suitable for light soils; and in the case of heavy land, 2 cwts. of nitrate of soda take the place of the same quantity of sulphate of ammonia. The manures are mixed with twice their weight of finely-screened earth, and sown broadcast before planting the Potatoes. The above mixtures give fully as good returns as 20 tons of good rotten dung. Mr Paterson was opposed to the application of soluble saline manures, such as common salt and potash salts, late in spring, and recommended that if possible they should be applied early in March, in order to allow them to be thoroughly assimilated with the soil, so as to benefit the crops; and came to the conclusion that potash was an indispensable artifice for invigorating the health of leguminous plants, and where alkali is absorbed, it must be supplied artificially, and with no sparing hand.

AGRICULTURAL SOCIETIES.

THE HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND.—Established 1784. Sanctioned by Royal Charter 1787. Secretary—F. N. Menzies, Esq., 3 George IV. Bridge, Edinburgh. The office-bearers of the Society consist of a President, four Vice-Presidents, ten extraordinary and thirty ordinary Directors, a Treasurer, and an Honorary and Acting Secretary. There are two general meetings for the election of members and other business in January and June or July annually. About fifty prizes are annually offered for essays and reports on subjects relating to landed property. The members number upwards of 3000. Annual payment of members, 23s 6d; but tenant farmers members of any Local Association pay only 10s per annum.

THE DUNDEE HORTICULTURAL SOCIETY holds an annual Flower Show in September. Upwards of Two Hundred Pounds and four Challenge Cups and various other valuable articles are offered for prizes for Fruits, Plants, Flowers, and Vegetables. Parties wishing to compete in the Nurseryman Class pay 5s; in the Gardener Class 4s; in the Amateur Class 3s; and two tickets of admission to the Show will be given to each competitor. W. R. M'Kelvie, Secretary.

INTERNATIONAL FRUIT AND FLOWER EXHIBITION.—Under the patronage of the nobility and gentry of Scotland, and under the auspices of the Glasgow and West of Scotland Horticultural Society. Holds its annual show at Glasgow in September. Franc. Gibb Dougall, Secy., 167 Canning Street, Glasgow.

THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—Instituted 1838. Secretary and Editor, H. M. Jenkins, Esq.—Office of the Society at 12 Hanover Square, London, W. There are a President, twelve Trustees, twelve Vice-Presidents, and many Life and Annual Governors as Members of Council. There are three general meetings held annually—the "Anniversary Meeting," for the election of the President and Council, held in May; the "General Meeting," held in December; and the "County Meeting," held somewhere in England or Wales during the month of July. Governors pay an annual subscription of £5, and members £1. The *Journal* of the Society

is published twice in the year, and sold at 6s the number. It is supplied to members gratuitously, who have also the privilege of free entry to the showyard, and of a special scale of charges for chemical analyses by Dr Voelcker, the Society's chemist, 11 Salisbury Square, E.C. The number of members is upwards of 5000.

THE SMITHFIELD CLUB.—Secretary, B. T. B. Gibbs, Esq., Half-moon Street, Piccadilly, London. It holds an annual show of fat stock in the New Agricultural Hall, Islington, in December. Members pay one guinea annually. Non-members pay the same for exhibiting.

THE BIRMINGHAM AND MIDLAND COUNTIES EXHIBITION OF CATTLE, SHEEP, PIGS, POULTRY, CORN, ROOTS, AND IMPLEMENTS.—Established in 1850. President, Lord Willoughby de Broke. Secretary, J. B. Lythall. It holds an annual show at Birmingham early in December. Prizes offered £2300. Subscribers pay £1 per annum, or a composition of £10.

THE MANCHESTER AND LIVERPOOL SOCIETY.—Established 1847. President, the Right Hon. the Earl of Bradford. Secretary, Thos. Nugby, Winsford, Cheshire. It holds an annual show of stock, poultry, dogs, implements, farm produce, cheese, butter, &c., early in September every year at some one of the principal towns in Lancashire, and gives prizes annually for best cultivated farms, green crops, grasses, draining, &c., to farmers resident in Lancashire and Cheshire. Membership £1 per annum. The annual meeting of members is held in November, and a *Journal* of proceedings, reports of crops, &c., is published for distribution among members. Prizes offered annually amount to nearly £3000.

THE ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.—Established 1841. Secretary, J. B. Thornhill, 42 Sackville Street, Dublin. This Society holds an annual meeting in the four provinces of Ireland in succession.

THE ROYAL DUBLIN SOCIETY.—President, The Lord-Lieutenant. Subscribers pay two guineas annually. It holds an annual Cattle Show in April, and its funds are mainly provided by a Government Grant.

CARE OF EXHIBITION POULTRY.

WHEN it is remembered that fowls have often to undergo a voyage to sea or a railway journey, previous to exhibition, the beautiful "bloom" which belongs to them originally may become faded, and the condition in which they appear may cause the following remarks to be appreciated, at least by amateurs:—

"The system pursued previous to sending to shows is as follows:—About a week beforehand select the pen you intend to send, seeing, of course, that they match well, and carefully wash their heads and legs. You then have a nice, dry room, pretty thickly covered with clean straw, in which you put them, scattering a few handfuls of wheat amongst it. They scratch the straw about searching for the grains, and thus clean themselves beautifully without further trouble. The birds being kept up by themselves, get so used to each other that they never quarrel, either on the journey or in the pen. They have to drink clear water with a little sulphate of iron dissolved, which causes a bright red colour in the ears and comb, and makes them look well and sprightly.

"Feed on oatmeal and Indian meal well boiled together with a small quantity of salt, just to season it; when properly done it is like a thick jelly. Twice, however, during the week, not more, they have rice, which is prepared by adding 1 lb. to a pint of water, and

boiling until the water is absorbed, then adding as much milk as it will take up without getting thin, with a handful of coarse brown sugar; keep stirring the whole till done, and then put in a bowl to cool. Of this they are very fond, and it keeps them from purging. Also give them plenty of fresh green food.

"In their hamper, put plenty of clean soft straw; also tie on one side of it, near the top, a fresh-pulled cabbage, and on the other side a good piece of the bottom side of a loaf, of which they will eat away all the soft part. Before starting, give each bird half a table-spoonful of port wine, which makes them sleep a good part of the journey.

"For white fowls, however, or which have much white in their plumage, the cleansing process above described will often be found insufficient. In such cases the birds must be carefully washed with soap and water the night before sending off. Take a fine sponge, and, having well soaped it, smooth down every feather repeatedly, so as to clean without ruffling it; then repeat the process with water only till the soap is removed, and, lastly, with a soft towel. Let the birds then be left for the night in a box well littered with clean straw, open to, but not too near, the fire. Soda should never be used, as it stains the feathers yellow; and even the soap must be mild, without much free alkali."

INTEREST TABLE FOR £100,

At 3, 3½, 4, 4½, and 5 per Cent.

Days.	3%	3½%	4%	4½%	5%	Days.	3%	3½%	4%	4½%	5%
s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1	0 1½	0 2½	0 2½	0 2½	0 3½	30	0 4 11	0 5 9	0 6 6½	0 7 4½	0 8 2½
2	0 3½	0 4½	0 5½	0 5½	0 6½	40	0 6 6½	0 7 8	0 8 9	0 9 10½	0 10 11½
3	0 5½	0 6½	0 7½	0 8½	0 9½	50	0 8 2½	0 9 7	0 10 11½	0 12 3½	0 13 8½
4	0 7½	0 9	0 10½	0 11½	1 1	60	0 9 10½	0 11 6	0 13 1½	0 14 9½	0 16 5½
5	0 9½	0 11½	1 1	1 2½	1 4½	70	0 11 6	0 13 5	0 15 4	0 17 3	0 19 2
6	0 11½	1 1½	1 3½	1 5½	1 7½	80	0 13 1½	0 15 4	0 17 6½	0 19 8½	1 1 11
7	1 1½	1 4	1 6½	1 8½	1 11	90	0 14 9½	0 17 3	0 19 8½	1 2 2½	1 4 7½
8	1 3½	1 6½	1 9	1 11½	2 2½	100	0 16 5½	0 19 2	1 1 11	1 4 8	1 7 4½
9	1 5½	1 8½	1 11½	2 2½	2 5½	200	1 12 10½	1 18 4½	2 3 10	2 9 3½	2 14 9½
10	1 7½	1 11	2 2½	2 5½	2 8½	300	2 9 3½	2 17 6½	3 5 9	3 14 0	4 2 2½
20	3 3½	3 10	4 4½	4 11	5 5½						

THE QUEEN AND ROYAL FAMILY.

THE QUEEN.—Victoria, born May 24, 1819; succeeded to the throne June 20, 1837; crowned June 28, 1838; and married Feb. 10, 1840, to Prince Albert (born August 26, 1819, and died December 14, 1861). Her Majesty is the only child of the late Edward Duke of Kent, son of King George III. The children of Her Majesty are:—

1. Victoria-Adelaide-Mary-Louisa, Princess Royal of England and Prussia, born Nov. 21, 1840, and married to Prince William of Prussia, Jan. 25, 1858, and has issue three sons and three daughters.

2. Albert-Edward, Prince of Wales, born Nov. 9, 1841; married, March 10, 1863, Alexandra, eldest daughter of Christian IX. King of Denmark, and has issue three sons and three daughters—

Prince Albert-Victor-Christian-Edward, born Jan. 8, 1864.

Prince George-Frederick-Ernest-Albert, born June 3, 1865.

Princess Louise-Victoria-Alexandra-Dagmar, born Feb. 20, 1867.

Princess Victoria-Alexandra-Olga-Mary, born July 6, 1868.

Princess Maude-Charlotte-Mary-Victoria, born Nov. 26, 1869.

Prince Alexander-John-Charles-Albert, born April 6, 1871, died April 7, 1871.

3. Alice-Maud-Mary, born April 25, 1843; married to Frederick Louis of Hesse, July 1, 1862, and has issue three daughters and two sons.

4. Alfred-Ernest-Albert, born Aug. 6, 1844.

5. Helena-Augusta-Victoria, born May 25, 1846; married, July 5, 1866, Prince Frederick Christian of Schlesvig-Holstein Augustenberg, and has issue two sons and two daughters.

6. Louisa-Carolina-Alberta, born March 18, 1848; married, March 21, 1871, John-Douglas-Sutherland Campbell, Marquis of Lorne, K.T.

7. Arthur-William-Patrick-Albert, b. May 1, 1850.

8. Leopold-George-Duncan-Albert, b. April 7, 1853.

9. Beatrice-Mary-Victoria-Feodore, b. April 14, 1857.

George-Frederick-William-Charles, K.G., Duke of Cambridge, cousin to Her Majesty, born March 26, 1819.

Augusta-Wilhelmina-Louisa, Duchess of Cambridge, aunt to Her Majesty, born July

25, 1795; married, in 1819, the late Duke of Cambridge.

George-Frederick-Alexander-Charles-Ernest-Augustus, K.G., ex-King of Hanover, cousin to Her Majesty, born May 27, 1819; married Princess Frederica of Mecklenburg-Strelitz, and has issue a son and two daughters.

Augusta-Caroline-Charlotte-Elizabeth-Mary-Sophia-Louisa, daughter of the late Duke of Cambridge, and cousin to Her Majesty, born July 19, 1822; married, June 28, 1843, to Frederick, Grand Duke of Mecklenburg-Strelitz, and has a son.

Mary-Adelaide-Wilhelmina-Elizabeth, daughter of the late Duke of Cambridge, and cousin to Her Majesty, born Nov. 27, 1833; married, June 7, 1866, Prince Teck, and has issue two sons and a daughter.

FORMAL MODES OF ADDRESS.

THE QUEEN.—"Madam."—"To the Queen's Most Excellent Majesty."

ROYAL FAMILY.—"Sir," "Madam."—"To His (or Her) Royal Highness," &c.

ARCHBISHOP.—"My Lord Archbishop."—"His Grace the Archbishop of A."

DUKE.—"My Lord Duke."—"His Grace the Duke of B."

MARQUIS.—"My Lord Marquis."—"The Most Noble the Marquis of C."

EARL, VISCOUNT, OR BARON.—"My Lord."—"The Right Hon. the Earl of D."—"The Rt. Hon. Viscount E."—"Rt. Hon. the Lord F."

BISHOP.—"My Lord Bishop."—"The Right Rev. the Lord Bishop of G."

HOLIDAYS IN PUBLIC OFFICES.

Bank of England and Exchequer—Good Friday, Dec. 25.

Bank Transfer Office—Good Friday, May 1, Nov. 1, Dec. 25.

Docks and Custom House—Good Friday, Queen's Birthday, Dec. 25.

Excise Office—Good Friday, Queen's Birthday, June 23, Nov. 9, Dec. 25.

Stamp and Tax Offices—Good Friday, Queen's Birthday, June 10, 11, 28, Nov. 9, Dec. 25.

Chancery Offices—Good Friday, April 22, 23, Dec. 25.

Common Pleas and Law Offices—Good Friday, April 20, 22, 23; Queen's Birthday; June 10, 11; Dec. 25, 26, 27, 28.

POST OFFICE REGULATIONS.

RATES OF POSTAGE.

To and from all parts of the United Kingdom, for prepaid letters :—

Not exceeding 1 oz.....	1d.
Exceeding 1 oz. but not exceeding 2 oz.	1½d.
" 2 oz. "	4 oz. 2d.
" 4 oz. "	6 oz. 2½d.
" 6 oz. "	8 oz. 3d.
" 8 oz. "	10 oz. 3½d.
" 10 oz. "	12 oz. 4d.

Any letter exceeding the weight of 12 ozs. will be liable to a postage of One Penny for every ounce, or fraction of an ounce, beginning with the first ounce. A letter, for example, weighing between 14 and 15 ounces must be prepaid fifteenpence. A letter posted unpaid will be charged on delivery with double postage, and a letter posted insufficiently prepaid will be charged with double the deficiency.

An Inland Letter must not exceed one foot six inches in length, nine inches in width, or six inches in depth.

Concurrently with the reduction of postage on Inland Letters, the Inland Sample Post was abolished.

INLAND BOOK POST.

The Book-Post rate is One Halfpenny for every 2 ozs. or fraction of 2 ozs.

A Book-Packet may contain not only books, paper, or other substance in ordinary use for writing or printing, whether plain or written or printed upon (to the exclusion of any written letter or communication of the nature of a letter), photographs, when not on glass or in frames containing glass or any like substance, and anything usually appertaining to such articles in the way of binding and mounting, or necessary for their safe transmission by post, but also *Circulars* when these are wholly or in great part printed, engraved, or lithographed.

Every Book-Packet must be posted either without a cover or in a cover open at both ends, and in such a manner as to admit of the contents being easily withdrawn for examination; otherwise it will be treated as a letter.

Any Book-Packet which may be found to contain a letter or communication of the nature of a letter, not being a circular-letter or not wholly printed, or any enclosure sealed or in any way closed against inspection, or any other

enclosure not allowed by the regulations of the Book-Post, will be treated as a Letter, and charged with double the deficiency of the Letter postage.

A packet posted wholly unpaid will be charged with double the Book-Postage; and if posted partially prepaid, with double the deficiency.

No Book-Packet may exceed 5 lbs. in weight, or one foot six inches in length, nine inches in width, and six inches in depth.

POSTAGE ON INLAND REGISTERED NEWSPAPERS.

Prepaid Rate.—For each Registered Newspaper, whether posted singly or in a packet—One Halfpenny; but a packet containing two or more Registered Newspapers is not chargeable with a higher rate of postage than would be chargeable on a Book-Packet of the same weight, viz., One Halfpenny for every 2 ozs., or fraction of two ozs.

Unpaid Rates.—A Newspaper posted unpaid, and a packet of Newspapers posted either unpaid or insufficiently paid, will be treated as an unpaid, or insufficiently paid Book-Packet of the same weight.

The postage must be prepaid either by an adhesive stamp, or by the use of a stamped wrapper. Every Newspaper or packet of Newspapers must be posted either without a cover or in a cover open at both ends, and in such a manner as to admit of easy removal for examination; if this rule be infringed, the newspaper or packet will be treated as a letter.

No Newspaper, whether posted singly or in a packet, may contain any enclosure except the supplement or supplements belonging to it. If it contain any other, it will be charged as a letter.

No packet of Newspapers must exceed 14 lbs. in weight, or two feet in length, by one foot in width or depth.

REGISTRATION.

By the prepayment of a fee of fourpence, any letter, newspaper, or book-packet may be registered to any place in the United Kingdom or the British Colonies. The Post Office will not undertake the safe transmission of valuable enclosures in unregistered letters; and letters found to contain coin, will, on delivery, be charged a double registration fee.

POST CARDS.

Post Cards, bearing an impressed halfpenny stamp, can be obtained at all Post Offices. They are available for transmission between places in the United Kingdom only. Introduced 1870. Post Cards are now sold at 6½d per dozen, instead of 4d each.

The new Postal Card just adopted by the United States Post Office Department will be of a light amber colour, five inches by three and one-eighth in size, and will weigh about one and one-fourth drachms. On one side will be a head of the goddess of Liberty, with the legend, "United States Postal Card." This side also contains the direction—"Write the superscription on this side, and the communication on the other."

POST OFFICE ORDERS.

Money Orders are granted in the United Kingdom as follows:—

For sums under 10s,	1d.
„ 10s. and under £1,	2d.
„ £1 „ „ £2,	3d.
„ £2 „ „ £3,	4d.
„ £3 „ „ £4,	5d.
„ £4 „ „ £5,	6d.
„ £5 „ „ £6,	7d.
„ £6 „ „ £7,	8d.
„ £7 „ „ £8,	9d.
„ £8 „ „ £9,	10d.
„ £9 „ „ £10,	11d.
„ £10	1s.

Above which none are granted, but orders can be multiplied to any amount.

There are now 12,000 Post Offices in the United Kingdom, of which 850 are Head Offices; while the number of road and pillar boxes, of which there are 1500 in London alone, is now nearly 8000.

A PLEASANT REMEDY FOR SEA-SICKNESS.—

There have been many suggestions made as to the prevention of sea-sickness, none of which have, to say the least, been found in practice to be completely successful. The introduction into practice of hydrate of chloral, which produces with certainty sleep for a definite number of hours, has suggested a means of escaping the horrors of a short sea passage at least, and possibly of mitigating the most prolonged horrors of sea-sickness. To go to sleep at Dover, and to wake to find oneself at Calais, is a plan which, failing other expedients, has in it much promise. An ordinary dose of

VACCINATION ACT.

It is imperative that parents should have every child vaccinated within three calendar months after birth, either by the legally qualified medical attendant of the family, or by the appointed public vaccinator. If other than the parents are left in charge of the child, the vaccination must then be within four months of birth.

REGISTRATION OF BIRTHS, &c.

FOR ENGLAND.

An infant should be registered within six weeks after its birth. No fee is payable; but after 42 days a fee of 7s 6d is chargeable.

Notice must be given of Deaths to the District Registrar. Let this be done early, as a certificate must be obtained to give to the minister who performs the funeral service.

FOR SCOTLAND.

An infant must be registered within 21 days after its Birth.—A Marriage must be registered within three days after its occurrence.—A Death must be registered within eight days after the demise.

BILL STAMPS AND PROMISSORY NOTES.

Where the amount for which the bill or note is drawn or made does not exceed.....	£5.....	s. d.
		0 1
Above £5 and not exceeding £10.....		0 2
„ £10 „ „ £25.....		0 3
„ £25 „ „ £50.....		0 6
„ £50 „ „ £75.....		0 9
„ £75 „ „ £100.....		1 0
And for every additional £100, and also for any fractional part of £100—1s.		

hydrate of chloral produces sleep usually in a quarter of an hour, and with almost unflinching certainty. Some cases, just published by Dr Dorking, of Vienna, seem to show that the value of hydrate of chloral to obviate sea-sickness is very great; it produces quiet and prolonged sleep. In all the instances recorded it seems to have been of great value, even during prolonged sea voyages, giving a good night's rest, arresting violent sickness when it had set in, and stopping the tendency to its recurrence. Of course, the dose should be taken under medical advice.

HINTS FOR HOUSE MANAGEMENT.

"The way to wealth is as plain as the way to market; it depends chiefly on two words—industry and frugality; that is, waste neither time nor money, but make the best use of both. Without industry and frugality nothing will do, but with them everything."—*Franklin*.

IN the choice of a residence it is not always possible to arrange as we might wish. It may be necessary that we should live in a particular town or neighbourhood. Therefore we must overlook many disadvantages, and forego many things that we might fancy necessary for our comfort. On these points the disposition and temper are much more concerned with everything than people are aware of. It is impossible to meet with everything we want and like combined. Situation, however, should be well considered, because it has much to do with health. A low situation is seldom healthy. On high ground there is always a freshness, a sweetness, and a buoyancy in the air which influences the health and spirits, and of which we are immediately sensible when we ascend a rising ground. Therefore a residence should be as far from anything likely to produce unwholesome effluvia. Noises are as unpleasant and disagreeable as bad smells, although habit accustoms us so much to them that we neither hear nor feel them. Still, every continuous noise should be avoided. One becomes so used to the striking of a clock in a house that it is scarcely ever heard. But let us always keep in mind that we shall be able to overcome all our difficulties if we regard them in their proper light, and consider that it is part of our duty to God and man to submit cheerfully to whatever situation we may be placed; and I am quite sure, if we could see the working of Almighty God in our every movement, we would meet the every-day difficulties with composure and little difficulty. Where water is scarce it is a great inconvenience. Nowadays there is room for complaint. Hard water is objectionable. It is not so good for cooking, washing, or brewing. For washing it can be rendered soft by using bleaching powder or soda, and for dressing or cooking vegetables a little carbonate of soda will correct the hardness. The way to discover the purity of water is to fill a deep clear glass, and then look down into it. This will show the slightest tinge of colour. Water chalybeate in its nature does not agree with every constitution. As not a single particle of our food is prepared without water, and as it is of such important an in-

fluence on health, every precaution should be taken that it be pure as well as plentiful.

HOUSE MAID.—Her first work of a morning is to rise early, wash her face, dress her hair particularly tidy, and dress herself quickly and neatly, so as she may not be ashamed to be seen. Then clean the grates and fire-irons. The fires must be lit if in winter. Common irons may be cleaned by rubbing them with a cloth dipped in vinegar, and afterwards scoured with rotten stone or white brick. This method does for all sorts of brass. If there be very fine steel stoves, irons, or fenders, first rub them with olive oil or goose grease, then rub with emery till clear and bright, and afterwards polish with leather. When she has thus prepared the stove, and lit the fires as directed in another page, she may clean her hearth. If black, it should be blacked and brightened; if tiles, rub with a wet cloth. For blacking hearthstones, take two pennyworth of black lead and $\frac{1}{4}$ lb. of coarse brown sugar, mix in half a pint of small beer, set it on the fire, stirring it ere it boils, then with a brush black the hearth and sides of the chimney two or three times, and next day brush up with a hard brush. They will be as bright as steel. When the housemaid has finished her work at the chimney, she should set about cleaning the locks, first procuring a piece of pasteboard, and cutting a hole in it the size of the lock-hole or door brass-plate, so that the wood of the door may not be rubbed on. Commence cleaning the window curtains by brushing them. She may then sweep out her room. A little damp sawdust or damp tea leaves is a very good thing to strew on the carpets or floors, which will most effectually keep the dust from flying about, but care must be taken not to put it on too damp. When she has swept the room, leaving no dust in corners, in the next place dust out the room, but not until all the dust may have fallen. It is a good method, where convenience will allow, to sweep the room the night before, leaving it to be dusted next morning. Sweep the stair, removing the wet sawdust or sand, then dust windows, balusters, and tops of doors. If

there is any stucco or carved work, blow off the dust with a pair of bellows. When the family are out of their rooms, set up the windows, uncover the bedclothes, take them off singly, place them longways on two chairs, taking care that none of them touch the floor. If the white quilts are allowed to trail on the floor they will get as much dirtied in one day as they would in a week with care taking. There is an old saying, "A penny saved is a penny won." Shake the bed well, turning it over, and if there be any mattresses let them be turned once a week. The cleaning of the curtains of the bed is not to go unnoticed—sweeping and cleaning as before directed. By thus keeping a constant eye on her work, all things will be to her easy and interesting, instead of a drag.

NURSERY MAIDS.—A nursery maid should possess a cleanly appearance, have a good and flexible temper, of industrious habits, and be rather better educated than common. She should know something of dressmaking, so as to be able to assist in making and repairing the children's clothes. On no account ought even the most unexceptionable servant to inflict on children any personal punishment. This can only be allowed at the hand of its parent, who is supposed not to inflict punishment in anger of the moment, but as a specific for the faults that have been committed. No mother should suffer her child to be punished at the hands of her servant. She would be very likely to correct them in wrath, and not from a spirit of justice, or with a desire to prevent a repetition of the offence. The power of a nurse ought to extend no further than to enforce by gentle but decided and firm measures the wishes of the parent. The habits that an infant's life calls for from its nurse are care and cleanliness. A nursery maid without these properties will not think sufficiently of her charge. She will hear it cry without giving herself trouble to find out the cause or to remove it. The hearing may also be sacrificed by carelessly leaving the head damp in cold weather. Exposure to cold winter winds causes earache. What might be the effects of such carelessness it would be impossible for me to say. If the skin be not well washed, the pores will become clogged and the insensible perspiration impeded, by which the whole system will become deranged. This is one cause of the squalid appearance which some children present. Besides the inconvenience, that want of cleanliness and order which is often betrayed at other periods of life may be

attributable to defects having prevailed in the nursery.

CLOTHES WASHING.—Cleansing the skin reminds us of another subject—clothes washing, that most temper-trying, wringing, skin-breaking, parboiling, and house turned topsy-turvy operation. All the customary annoyances might be avoided by adopting the following simple system, as practised in families in many parts of England. We describe it in the form of a receipt. **Ingredients**—soap, either soft or yellow, three-quarters of a pound; soda, a quarter of a pound; quick-lime, half a pound. Pour over the soap and soda half a gallon of boiling water, and stir or whisk it to a good lather. About the same quantity is to be poured over the lime, which must be quite fresh. If it do not hiss, bubble, and crack when the water reaches it the virtue is gone. When this liquor is quite clear, pour it steadily off, add it to the other mixture, stir them well together, and put into the copper with as much water as will be required for the quantity of clothes to be washed. Unless the wash is very large, all the clothes to be washed may be put in the copper at the same time, the coarsest and dirtiest at the bottom. Collars and wristbands of shirts and feet of stockings should be previously rubbed a little, but no other rubbing is required. Four hours is a sufficient time to boil. If more convenient, the clothes may be put in over night, and the copper made to boil up; then fill the copper hole with small coal and cinders, and leave it all night. In the morning light the fire, and boil up once more, when the linen will be sufficiently done; wring it out of the liquor, and rinse in hot water, blued.

FIRES KINDLING.—There is in this, as in most other proceedings connected with the house, a right and a wrong. From experience in the kindling and management of fires, I submit the following directions:—Clean out the room grate; if the grate is open in the bottom, cover it with a piece of iron to fit. Place in the coals to the level of the top rib, keeping the largest pieces at the front. Have some wood cut small, and place it on the top of the coals, and lastly throw on all the cinders from under the grate. A very few fresh coals may be put on the top of the cinders. When kindled, it will burn downwards undisturbed. An ordinary fireplace prepared in this way will burn from six to ten hours without any renewal of coals, and will burn brighter than if lighted from below, and will be less likely

to cause smoke. It is a practice of the unwary, so soon as they enter a room where there is a fire burning, to insert the poker, causing the black dust to mix amongst the cinders—no trifling portion of which pours through the grate—thus almost extinguishing the fire. Exclamations follow as to the badness of the coals and the bad construction of the grate. Fresh attacks with the poker completely extinguish the fire, the consequence being the summoning of the servant to have it relighted. To prevent all this, let the fire kindle and burn gradually.

“SCOTCH HAGGIS”—THE KING OF THE PUDDING RACE.—First procure a sheep's draught and bag; then be sure to wash and clean them properly. Parboil the draught; and boil the liver so that it will grate. Mince the heart and lights small. Add one pound of minced suet, one half pound of best minced meat, two or three onions, minced, with two small handfuls of dried oatmeal. Season highly with pepper and salt, and add about a quart of the water in which the draught was boiled. Mix all together properly; then put all these ingredients into the bag, pressing out the air. Sew it up, and boil for three hours. If the bag is thin, put it into a cloth. The water should be nearly boiling before the Haggis is dropped in; and the cover must not be put on close, or the bag will burst.

POTATO SOUP—SCOTCH.—Potato Soup may be made with bacon, beef, mutton, or any scraps boiled in water until the strength be extracted then strain the liquor and put it into a pot with a few well-scraped Potatoes. Season with carrots, turnips, onions, pepper and salt. Boil the Potatoes till they are all broken down—if wanted very smooth, press them through a culender; then put the soup on to boil again. You might add a little cream before serving. A more economical plan is to boil the Potatoes in the skins by themselves, then peel and mash them and add them to your stock.

TO CRYSTALLISE FRUIT.—Beat the white of an egg to froth, and dip the fruit in it; then roll it in sifted white sugar candy. Then place the fruit in a stove to be slowly dried; or you may dry the fruit first, then dip it in the white of an egg, then dust it with sifted white sugar or sugar candy, finally drying it off.

CEMENT FOR CHINA WARE.—“A penny saved is a penny won.”—Take the third of a

teacupful of gin, and add as much isinglass as will dissolve; then pour it into a thick, glass bottle. Dip the bottle into hot water till the contents dissolve; and it is ready for use when it becomes stiff. When required again it has just to be re-heated, adding a little more gin. By dissolving the isinglass in clean water, and adding the white of an egg, you will have another good cement.

FOR THE SICK ROOM.—The following recipe makes a deliciously refreshing wash in the sick room, and cools the aching head. Take of rosemary, wormwood, lavender, rue, sage, and mint, a large handful of each. Place in a stone jar, and turn over it one gallon of strong cider vinegar; cover closely, and keep near the fire for four days. Then strain, and add one ounce of pounded camphor gum. Bottle and keep tightly corked. There is a French legend connected with this preparation called *vinagre a quatre voleurs*. During the plague at Marseilles a band of robbers plundered the dead and the dying without injury to themselves. They were imprisoned, tried, and condemned to die, but were pardoned on condition of disclosing the secret whereby they could ransack houses infected with the terrible scourge. They gave the above recipe. Another mode of using it is to wash the face and hands with it before exposing one's self to any infection. It is very aromatic and refreshing in the sick room; so, if it can accomplish nothing more, it is of great value to housekeepers.

POSITION IN SLEEP.—Sleeping rooms should always be so arranged, if possible, to allow the head of the sleeper to be towards the north. Frequently, in cases of sickness, a person will find it impossible to obtain rest if the head is in any other direction, and often a cure is retarded for a long time. A Vienna physician had a patient who was suffering from acute rheumatism, with painful cramps running from the shoulders to the fingers; and while his head was to the south he could do nothing towards his relief. On turning the bed, however, so that the head was towards the north, the patient uttered expressions of pleasure, and in a few hours a great improvement had taken place, and he was in a few days almost entirely cured. Many other cases are given by scientific persons; and people, in building houses, should always have this in view.

THE HOUSE ON FIRE.—If in bed, wrap yourself in a blanket or bedside carpet; open neither windows nor doors more than necessary; shut

every door after you. In the midst of smoke progress can be made on the hands and knees. A wet sponge, or a silk handkerchief, worsted stocking, or other flannel substance, wetted and drawn over the face, permits free breathing, and excludes, to a great extent, the smoke from the lungs.

THE PERSON ON FIRE.—Upon discovering yourself on fire, throw yourself on the ground, and roll over on the flames; if possible, on the rug or loose drugget, which drag around you; scream for assistance, but do not run out of the room. All light dresses should be washed in a weak solution of chloride of zinc.

TO CLEAN KNIVES.—A small, clean Potato, with the end cut off, is a very convenient medium of applying brick-dust to knives, keeping it about the right moisture, while the juice of the Potato assists in removing stains from the surface. A better polish can be obtained by this method than by any other we have tried, and with less labour.

PUNCTUALITY.—Punctuality is not a large sounding word, but not a few of us are a little inclined to undervalue its importance; yet this is wrong, for to punctuality we owe,

in a measure, our success in many an undertaking. Not a few of those who have arisen to eminence have attributed their advancement to punctuality. And in that character, which we love best to cultivate, we find it an adorning trait. The punctuality of Washington is proverbial. It is said of George III. that an appointment was never ahead of him; of Nelson, that one always found him in waiting; and with Admiral Napier punctuality was a cardinal virtue. It may seem of little moment to be punctual, but to use the words of an eminent theologian, "our life is made up of little things." Our attention to them is the index of our character, often the scales by which it is weighed. Punctuality requires no undue exertion, and its influence is a most salutary one. Its cultivation seems the more important as we witness the deleterious influence of dilatoriness in habit, the evil effect of which none deny. "Better late than never," transformed into "Better never late," is an excellent maxim. Whether we move in the higher walks of life, or tread the quiet paths of humble pursuits, punctuality amply repays us for that little effort we make in its cultivation, and many it has richly rewarded. Allied to perseverance and industry, it will crown life with success.

SPECIFIC DIRECTIONS FOR PURCHASING MEAT, POULTRY, GAME, FISH, &c.

MEAT.

Beef.—Ox-Beef has an open grain, and is of a bright red colour, when young. The grain of cow-beef is closer, the fat whiter, and the lean is not so bright as ox-beef. Bull-beef is more closely-grained still, the fat hard and skinny, and the lean a dusky red. Is in the highest perfection from November to January.

Veal.—Choose the meat of which the kidney is well covered with fat, the vein in the shoulders of a bright red, and the leg bone small. The meat should be firm and white; if clammy or spotted it is stale. In a good head the eyes will be plump and lively, if otherwise it is stale. Is in season from June to November.

Mutton.—If fresh, the vein in the neck of mutton or lamb is ruddy or bluish, but if of a green or yellowish cast, a faint smell under the kidney, the knuckle soft, or the eyes sunk, the meat is stale. Not good under three years old; it is best when about five, but seldom to be got in the market at that age.

Pork.—When the rind is thick and tough, the meat is old; the lean part of young pork should look white and smooth, the fat white and fine, and the bone small.

Bacon.—If good, and not old, the rind will be thin, the fat will feel oily and appear white, the lean tender, of a good colour, and will adhere to the bone. When there are streaks of yellow in it, if not already rancid, it will soon become so.

Hams.—Make an incision with a sharp-pointed knife under the bone; if it smells sweet, the ham is good. Hams short in the shank are best.

Venison.—Young venison may be known by its clear white thick fat, and by the cleft part being smooth and close. If the cleft is wide and tough, it is old. Run a sharp narrow knife into the shoulder, or haunch, and judge of its sweetness by the smell.

POULTRY AND GAME.

Turkeys.—If young, the legs will be smooth

and black, with short spurs: if fresh, the eyes will be full and bright, and the feet supple and moist. In a stale bird, the eyes are sunk and the feet dry. The hen turkey, if young, is known by the same rules; if old, the legs will be red and rough.

Pigeons.—The heaviest and plumpest birds are the best. If the vent appears flabby and discoloured, they are not fresh; the feet should be supple. All kinds of doves, field-fares, &c., chosen by the same rule.

Fowls.—When a cock is young, his spurs will be short; but take care to observe that they have not been cut or pared. If fresh, the vent will be firm. Pullets are best just before they begin to lay. If young hens, their combs and legs will be smooth: if old, they will be rough. A good capon has a large rump, thick belly, fat vein on the side of the breast, and his comb is very pale. Black legged fowls are best, if for roasting.

Geese and Ducks.—The bill and feet, if young, are yellow, and have few hairs upon them; if old, they will be red and full of hairs. Choose them hard and thick on the breast and belly; if fresh, the feet will be supple, but dry and stiff when stale. Geese are called green till three or four months old. Green geese and ducklings must be scalded; stubble geese picked dry.

Woodcocks, Snipes, Teals, and Widgeons, if fresh, will be supple-footed: feel thick and hard when fat.

Plovers.—When firm and hard at the vent, they are fat and fresh; when old, the feet are dry.

Pheasants.—The cock bird is the most esteemed. If young, he has short blunt or round spurs; but if old, they are long and sharp. If the vent be firm, the bird is fresh; if open and flabby, stale. If a hen, and young, the legs will be smooth, and her flesh of a fine grain; if old, her legs will be rough, and covered with hairs.

Partridges.—When young, the bill is of a dark colour, and the legs yellowish; if fresh, the vent will be firm, but greenish if stale.

Hares and Rabbits.—When the claws are smooth and sharp, the ears easily tear, and the cleft in the lip not much spread, they are young. If newly killed, the body will be stiff, and in hares the flesh pale. If stale they will be supple, and in many places blackish and discoloured. To know a leveret or young hare,

look for a knob, or small bone, near the foot, on its fore leg.

FISH.

Turbot, Soles, and Flounders, if good, will be thick and plump, and the belly of a fine cream colour; that which is thin and of a bluish colour is bad.

Salmon.—If the scales are bright, the flesh of a fine red colour, and the whole fish stiff, it is new. Those with small heads and thick shoulders are the best.

Cod.—The gills should be very red, and the eyes fresh; the flesh white and firm, and thick towards the head.

Skate.—When good, they are very white and thick; they are likely to be tough, if cooked too soon after they are caught, but must not be kept beyond two days.

Sturgeon, when good, must have a fine blue in its veins and gristle; the flesh must be white, and cut without crumbling.

Herring.—They should be stiff and firm, the gills of a fine red, and the eyes bright. When faded, wrinkled, or pliable in the tail, they are unfit for the table.

Mackerel, Whiting, and other Fish may be chosen generally by the same rules.

Lobsters should be chosen by their weight, stiffness of their tail, and the firmness of their sides. The cock lobsters are in general the best, and may be known by their narrow tails.

Eels.—The best kind is the silver eel, which is known by the bright colour of the belly.

Crabs.—Those of a middling size are sweetest; the joints of the legs are stiff when they are in perfection. The male is the best, and may be known by its narrow breast.

Prawns and Shrimps.—When fresh they are firm, stiff, and of a bright colour.

Oysters.—If they are alive and strong, the shell will close on the knife in opening. They should be immediately used, or the flavour is lost. Those called Pandore, from the Firth of Forth, are the most esteemed.

BUTTER AND EGGS.

Butter should be bought by the taste and smell; if tub butter, taste it near the outside.

Eggs may be tried by putting the tongue to the end; new eggs will then feel warm; but if old, they will feel quite cold. Eggs will keep many months if they are set upright, or smeared with butter when new laid.

MEAT.

Beef is in the highest perfection from November to January, but it is always in season.
Mutton is in the highest perfection from June to November, but, like beef, is always in season.

Veal is in season from February till October, and may be had in the other months.

Lamb.—Grass lamb is in season from April to August, and house lamb may be had in the other months; it is most esteemed in December and January.

Pork is most plentiful from November to March, but may be had throughout the year. Roasting pigs are always in season.

Venison.—Buck venison is in the highest perfection from June to September; and doe venison from October to December.

FISH.

Salmon are in good perfection in April, May, and June; and are only quite out of season in September, October, and November.

Cod Fish are in season from June to January.

Herring are in season from July to Feb.

Mackerel are in season from April to July.

The large *Lobsters* are in their best season from the middle of October till the beginning of May. Many of the small ones, and some of the larger sort are good all the summer.

Oysters are in season from Sept. to April.

Haddocks are in season from May to February; in Dec. and Jan. they are in perfection.

Whitings are in season from January to March, but may be obtained during the greater part of the year.

Skate are best from January to June, and are only out of season in September.

Trout are in season from May to July.

Perch are in season in June and July, and till November.

Eels are in season from September to June.

Plaice and *Flounders* are in season from January to March, and from July to Sept.

Turbot and *Soles* are in perfection about midsummer, and are in the market almost all the year.

Pike are in season from July to November.

Crabs are in season from August to May, as are also prawns, shrimps, and other small shell-fish.

Halibut are in season in the spring months only.

Smelts are in season from January to June, and are to be had in October and November.

POULTRY AND GAME.

Fowls are in season except when they are moulting, which is during the autumn for the old, and in spring for the young. Chickens may be had all the year, excepting sometimes in January.

Turkeys are in season from September to February; and turkey poults are in season from June to November.

Geese are in season from September to February; and green geese are in season from April to September.

Ducks are in season from August to February; and ducklings from April to June.

Pigeons are in season from February to Nov.

Hares are in season from September to February, and leverets during the other months.

Rabbits are in season throughout the year.

Pheasants are in season from Oct. to Dec.

Partridges are in season from Sept. to Jan.

Woodcocks and *Snipes* may be had from November to March.

Grouse and *Blackcocks* are in season from August to December.

Wild-ducks and *Wild-geese* are in season from Sept. to Feb., as are also teals and widgeons.

Plovers are in season from July to Sept.

VEGETABLES.

Cabbages: early cabbages are in season from April to July, and other cabbages till Feb.

Scots Kale is in season from Nov. to April.

Cauliflower is in season from May to Nov.

Brocoli is in season from Dec. to April.

Turnips and *Carrots* in May: used all the other months.

Parsnips are in season from Oct. to April.

Jerusalem Artichokes are in season from Sept. to March.

New Potatoes in June, and *Peas*, &c., from June to Nov.

Kidney Beans are in season from the end of June to September.

Spinach: the winter spinach is in season from Nov. to May, and the summer spinach during the other months.

Asparagus is in season from April to July.

Sea Kale is in season from Dec. to April.

Leeks are in season from October to May.

Artichokes are in season from June to Oct.

Lettuce, taking it in its varieties, is always in season.


Celery is in season from Sept. to March.

Garden Cress, *Mustard*, and *Sorrel*, throughout the year.

Radishes are in season from March to May.

Cucumbers are in season from June to Sept.

DIRECTIONS FOR CARVING, &c.

 **LADY**, in carving, requires an elevated seat and a light knife, having a very keen edge. More depends on address than personal strength. Constant practice will render it easy to carve the most difficult article. But it might be advisable that joints of mutton, veal, lamb, &c., should previously be divided by the butcher, so that they may be easily cut through, and fine slices taken off between every two bones. In joints of beef and mutton, the knife should pass down the bone. In helping fish, the flakes should not be broken. A fish slice ought to be used, and care taken to send a part of the roe, liver, &c., to each individual. The heads of cod, salmon, carp, fins of turbot, and sounds of cod, are esteemed as delicacies. In carving ducks, geese, turkeys, or wild fowl, cut the slices down from pinion to pinion, without making wings. As practical utility is our object, we shall limit these directions to such articles as are generally found on the tables of respectable families.

SHOULDER OF MUTTON.—This joint is laid on the dish with the back uppermost. When it is first cut, the incision ought to be directed to the hollow part, and the knife passed to the bone thoroughly. The prime fat lies on the outer edge, and should be cut in thin slices. If the company is large, and the hollow part may be disposed of, some pieces may be had from either side of the ridge of the blade bone.

ROAST AND BOILED FOWLS.—When boiled the legs are bent inwards, trussed with the apron, and skewered till served; in a roasted fowl they are left out and skewered. You may remove the fowl upon your plate, and spread the joints in succession as cut off on the dish, if not served round to the guests. Place your fork in the breast, and take off slices from the breast on each side of the merry-thought. Then separate the wing, in the direction of your fork, and draw aside the wing towards the leg, by which the muscles are separated more completely. Slip your knife between the leg and the body, cutting to the bone; next turn the leg backwards with your fork, and instantly the joint separates, if the bird itself be really fine. You may now take away the merry-thought, also the neck bones; break it away from the part that adheres to the breast, afterwards proceed to divide the breast from

the body, by cutting through the tender ribs close to the breast down to the tail. Turn the back upwards, and divide it half way between the neck and the rump. Turn the rump away from you, and neatly take away the sidesmen. The prime parts of a fowl, whether boiled or roasted, are the breast, merry-thought, wings, particularly a livered wing, and side-bones. The thigh of a boiled fowl is often preferred, if white, fleshy, and fat.

PIGEON.—The lower part of this familiar bird is esteemed the best. The fairest way on all occasions, however, is to divide it from top to bottom.

ROUND OF BEEF must be cut in thin slices, and very smooth, observing to help every person to a portion of the fat, cut in thin slices. A thick slice should be cut off the meat before you begin to help, as the boiling water renders the outside vapid and tasteless.

SIRLOIN OF BEEF.—Carve a sirloin of beef either at the end or by cutting into the middle. Cut slices close down to the bone, and let them be thin. Give some of the fat with each slice.

FILLET OF VEAL.—Lemon should always be served with this joint. Take off thin smooth slices, observing to take from the flap, into which you must cut deep, a portion of stuffing to every slice, as likewise a small piece of fat.

BREAST OF VEAL is composed of two parts, the ribs and brisket. The latter is thickest, and is composed of gristle, the division of which you may easily discern, at which part you must enter your knife, and cut through it, which will separate the two parts.

TURKEY, roasted or boiled, is trussed and sent up to table like a fowl, and cut up like a pheasant. The best parts are the white ones, the breast, wings, and neck bones. Merry-thought it has none; the neck is taken away, and the hollow part under the breast stuffed with forced meat, which is to be cut in thin slices in the direction from the rump to the neck, and a slice given with each piece of turkey. It is customary not to cut up more than the breast of this bird, but if any more be wanted, to take off the wings.

PHEASANT.—Place the fork in the centre of its breast, and slice it downwards; then separate its leg on one side, and afterwards cut off the adjoining wing. In the same manner divide the leg and wing on the opposite side of the bird, and cut off slices from the breast you had separated. Next cut off the merry-thought, by passing your knife under it towards the neck. The leg, breast, wing, and merry-thought are the favourite parts of this delicious bird.

THE HAUNCH OF MUTTON is formed of the leg and part of the loin, cut so as to resemble the venison haunch, and is helped in a similar way.

SADDLE OF MUTTON.—Long thin slices may be taken from the tail downwards to the end, commencing at the back bone; and, if the joint be large, divide the slice. Cut fat from either side.

HAM.—To cut hams, commence in the middle, taking long slices from the middle through the thicker fat. Cutting a small roundish hole on the upper part will bring the carver to the prime slices. Enlarge the opening by successive thin circles, which preserves the juices, and thereby the moisture of the meat. The economical way is to begin at the back end and carve onwards. Ham intended for pies should be sliced from the under side.

SUCKING PIG is sometimes sent whole to table, but cut up by the cook, who takes off the head, which must be cut in two pieces, and placed one on each side or end of the dish, splits the body down the back, and garnishes with the jaws and ears. First separate the shoulder, and then the leg; after which, divide the ribs into four parts. The most delicate part of the pig is about the neck; the next best parts are the ribs.

OBSERVATIONS ON KEEPING AND DRESSING MEAT AND VEGETABLES.

WHEN every sort of provisions, the best of the kind goes farthest; it cuts out with most advantage, and affords most nourishment. Round of beef, fillet of veal, and leg of mutton, are joints that bear a higher price; but as they have more solid meat, they deserve the preference. It is worth notice, however, that those joints which are inferior may be dressed as palatably; and being cheaper, they ought to be bought in turn; for, when they are weighed with the prime pieces, it makes the price of these come lower.

In loins of meat, the long pipe that runs by the bone should be taken out, as it is apt to taint; as also the kernels of beef. Rumps and edgebones of beef are often bruised by the blows the drovers give the beasts, and the part that has been struck always taints; therefore do not purchase these joints if bruised.

The shank-bones of mutton should be saved; and, after soaking and brushing, may be added to give richness to gravies or soups. They are also particularly nourishing for sick persons.

When sirloins of beef, or loins of veal or mutton, come in, part of the suet may be cut off for puddings, or to clarify.

Dripping will baste every thing as well as butter, except fowls and game; and for kitchen pies nothing else should be used.

The fat of a neck or loin of mutton makes a far lighter pudding than suet.

Meat and vegetables, that the frost has touched, should be soaked in cold water two or three hours before being used, or more if they are much iced. Putting them into hot water, or to the fire, till thawed, makes it impossible for any heat to dress them properly afterwards.

In warm weather, meat should be examined well when it comes in; and if flies have touched it, the part must be cut off, and then well washed. In the height of summer, it is a very safe way to let meat that is to be salted lie an hour in very cold water, rubbing well any part likely to have been fly-blown: then wipe it quite dry, and have salt ready and rub it thoroughly in every part, throwing a handful over it besides. Turn it every day, and rub the pickle in, which will make it ready for the table in three or four days.—If to be very much corned, wrap it in a well-floured cloth, after rubbing it with salt. This last method will corn fresh beef fit for the table the day it comes in, but it must be put into the pot when the water boils.

If the weather permit, meat eats much better for hanging two or three days before it is salted.

The water in which meat has been boiled makes an excellent soup for the poor, by adding to it vegetables, oatmeal, or peas.

Roast-beef bones, or shank bones of ham, make fine peas-soup; and should be boiled with the peas the day before eaten, that the fat may be taken off.

In some families great loss is sustained by the spoiling of meat. The best way to keep what is to be eaten unsalted is, as before directed, to examine it well, wipe it every day, and put some pieces of charcoal over it. If meat is brought from a distance in warm weather, the butcher should be ordered to cover it close, and bring it early in the morning; but even then, if it is kept on the road while he serves the customers who live nearest to him, it will very likely be fly-blown. This happens very often in the country.

Wash all meat before you dress it. If for boiling, the colour will be better for soaking; but if for roasting, dry it.

Boiling in a well-floured cloth will make meat white.

Particular care must be taken that the pot is well skimmed the *moment* it boils, otherwise the foulness will be dispersed over the meat. The more soups and broth are skimmed, the better and cleaner they will be.

The boiler and utensils should be kept delicately clean.

Put the meat into cold water, and flour it well first. Meat boiled quick will be hard; but care must be taken that in boiling slow it does not stop, or the meat will be underdone.

If the steam is kept in, the water will not lessen much; therefore when you wish it to boil away, take off the cover of the soup-pot.

Vegetables should not be dressed with the meat, except carrots or parsnips with boiled beef.

As to the length of time required for roasting and boiling, the size of the joint must direct; as also the strength of the fire, the nearness of the meat to it; and in boiling, the regular, though slow progress it makes; for if the cook, when told to hinder the copper from boiling quick, lets it stop from boiling up at all, the usual time will not be sufficient, and the meat will be underdone.

Weigh the meat; and allow, for all solid joints, a quarter of an hour for every pound, and some minutes (from ten to twenty) over, according as the family like it done.

A ham of twenty pounds will take four hours and a half, and others in proportion.

A tongue, if dry, takes four hours' slow boiling, after soaking. A tongue out of pickle from two hours and a half to three hours, or more if very large. It must be judged by feeling whether it is very tender.

A leg of pork or of lamb take the allowance of twenty minutes, above a quarter of an hour to a pound.

In roasting, beef of ten pounds will take above two hours and a half; twenty pounds will take three hours and three quarters.

A neck of mutton will take an hour and a half, if kept at a proper distance. A chine of pork two hours.

The meat should be put at a good distance from the fire, and brought gradually nearer when the inner part becomes hot, which will prevent its being scorched while yet raw. Meat should be MUCH BASTED; and, when nearly done, floured to make it look frothed.

Veal and mutton should have a little paper put over the fat to preserve it. If not fat enough to allow for basting, a little good dripping answers as well as butter.

The cook should be careful not to run the spit through the best parts, and should observe that it be well cleaned before and at the time of serving, or a black stain appears on the meat. In many joints the spit will pass into the bones, and run along them for some distance, so as not to injure the prime of the meat; and the cook should have leaden skewers to balance it with, for want of which ignorant servants are often troubled at the time of serving.

In roasting meat it is a very good way to put a little salt and water into the dripping-pan, and baste for a little while with this, before using its own fat and dripping. When dry, dust it with flour, and baste as usual.

Salting meat before it is put to roast draws out the gravy. It should only be sprinkled when almost done.

Time, distance, BASTING OFTEN, and a clear fire of a proper size for what is required, are the first article of a good cook's attention in roasting.

Old meats do not require so much dressing as young—not that they are sooner done, but they can be eaten with the gravy more in.

A piece of writing paper should be twisted round the bone at the knuckle of a leg or shoulder of lamb, mutton, or venison, when roasted, before they are served.

When you wish fried things to look as well as possible, do them *twice* over with egg and

crumbs. Bread that is not stale enough to grate quite fine will not look well. The fat you fry in must always be put into the cold pan, and then made up to browning heat before the fish or meat is put in, and kept till they are cooked. You may dust with flour and turn.

TO KEEP MEAT HOT.—It is best to take it up when done, though the company may not be come. Set the dish over a pan of boiling water, put a deep cover over it, so as not to touch the meat, and then throw a cloth over that. This way will not dry up the meat.

KEEPING OF VEGETABLES.—A practice prevails that is utterly ruinous to the delicacy of culinary vegetables, namely, watering them whenever they become dry. This gives them a fresh look for the time, but makes them hard and tough when dressed. The sooner vegetables are used after they are gathered the better. In general they should be kept apart,

for if laid in contact in a very short time they impart their peculiar flavours to each other. Leeks or celery will quickly spoil a whole basketful of cauliflower or the finer vegetables. If the vegetables have become dry and flaccid, the stalk, after being cut a little shorter, should be immersed in water; but if the stalk does not admit of this, the whole vegetable should be immersed. Succulent vegetables should therefore be kept in a cool, shady, and damp place. They should also be kept in a heap, and not spread out, which greatly influences their shrivelling. Potatoes, turnips, carrots, and similar roots, intended to be stored up, should never be cleaned from the earth adhering to them, because the little fibres by which it is retained are thus wounded, and the evaporating surface is increased. The tops of turnips and carrots should be cut off close to, but above the root. Vegetables boiled in hard water lose their fresh green appearance unless a small quantity of potash be previously added to the water.

PRESERVATION OF FRUIT, &c.

THE preservation of fruit is in many countries an object of much importance. In some, the great object is to preserve the fruit in as natural a state as possible. This is particularly the case in regard to winter apples and pears and grapes. The time for gathering fruits depends upon their exposure, and the manner of gathering them influences their keeping. After having prepared the fruit-room, a fine day is to be chosen, and, if possible, after two or three preceding days of dry weather, and about two in the afternoon, the fruit is to be gathered, and deposited in baskets of a moderate size, taking care that none of it receive any bruise or blemish, for the injured part soon rots and spoils the sound fruit in contact with it. As the summer fruits ripen more quickly after they are pulled, only a few days' consumption should be gathered at once, by which means we can enjoy them for a greater length of time. Autumn apples and pears should be gathered eight days before they are ripe; and, indeed, some kinds never become fit for eating on the tree. If they have been necessarily gathered in wet weather, or early in the morning, they should be exposed a day to the sun to dry, and they should on no account be wiped, which rubs off the bloom,

as it is called, which, when allowed to dry on some fruits, constitutes a natural varnish, closing up the pores, and preventing the evaporation of the juices. They should not be laid in heaps, which causes them to sweat, and undergo a slight fermentation; for fruit thus treated, if it does not spoil, gets dry and mealy; and hence, in this country, the ordinary apples imported from England and the Continent are inferior to our own. The principal requisites for a good fruit-room are great dryness, and equality of temperature, and the power of excluding light. Some curious persons preserve fine pears, by passing a thread through the stalk, of which they seal up the end with a drop of sealing wax, enclose each separately in a cone of paper, and hang them up by the thread brought through the apex. Experience has also proved that grapes keep better when hanging than when laid upon a table. The cut end should be closed with wax, which prevents the exhalation.—Some hang them by the stalk, others by the point of the bunch, as the grapes are thus less pressed against each other; but it is in both cases necessary to visit them from time to time, and cut off, with a pair of scissors, those that are mouldy or spoiled.

HUSBANDS AND WIVES.

HINTS TO HUSBANDS.

YOU can hardly imagine how refreshing it is to occasionally call up the recollection of your courting days. Consider whether, as a husband, you are as fervent and constant as you were when a lover. Remember that the wife's claims to your unremitting regard, great before marriage, are now exalted to a much higher degree. She has left the world for you—the home of her childhood, the fire-side of her parents, their watchful care and sweet intercourse have all been yielded up for you. Look, then, most jealously upon all that may tend to attract you from home, and to weaken that union upon which your temporal happiness mainly depends; and believe that in the solemn relationship of husband is to be found one of the best guarantees for man's honour and happiness.

Summer is the season of love! Happy birds mate, and sing among the trees; fishes dart athwart the running streams, and leap from their element in resistless ecstasy; what shall the husband do now, when earth and heaven seem to meet in happy union? Must he still pore over the calculations of the counting-house, or ceaselessly pursue the toils of the work-room, sparing no moment to taste the joys which heaven measures out so liberally? No! "Come, dear wife, the summers are few we may dwell together; we will not give them all to Mammon. Again let our hearts glow with emotions of renewed love—our feet shall again tread the greensward, and the music of the rustling trees shall mingle in our whisperings of love!"

Custom entitles you to be considered the "lord and master" over your household. But don't assume the *master* and sink the *lord*. Remember that noble generosity, forbearance, amiability, and integrity are among the more lordly attributes of man. As a husband, therefore, exhibit the true nobility of man, and seek to govern your own household by the display of high moral excellence. A domineering spirit—a fault-finding petulance—impatience of trifling delays—and the exhibition of unworthy passions at the slightest provocation, can add no laurel to your own "lordly" brow. It is one thing to be a *master*—another thing to be a *man*. The latter should be the husband's aspiration; for he who cannot govern himself is ill qualified to govern another.

HINTS TO WIVES.

IF your husband occasionally looks a little troubled when he comes home, do not say to him, with an alarmed countenance, "What ails you, my dear?" Don't bother him; he will tell you of his own accord, if need be. Don't rattle a hailstorm of fun about his ears either; be observant and quiet. Don't suppose, whenever he is silent and thoughtful, that you are of course the cause. Let him alone until he is inclined to talk; take up your book or your needlework (pleasantly, cheerfully, no pouting, no sullenness), and wait until he is inclined to be sociable. Don't let him ever find a shirt button missing. A shirt button being off a collar or wristband has frequently produced the first hurricane in married life. Men's shirt collars never fit exactly; see that your husband's are made as well as possible, and then, if he does fret a little about them, never mind it; men have a prescriptive right to fret about shirt collars.

Never complain that your husband pores too much over the newspaper, to the exclusion of that pleasing converse which you formerly enjoyed with him. Don't hide the paper; don't give it to the children to tear; don't be sulky when the boy leaves it at the door; but take it in pleasantly, and lay it down before your spouse. Think what a man would be without a newspaper; treat it as a great agent in the work of civilisation, which it assuredly is; and think how much good newspapers have done by exposing bad husbands and bad wives by giving their errors to the eye of the public.

Perchance you think that your husband's disposition is much changed; that he is no longer the sweet-tempered, ardent lover he used to be. This may be a mistake. Consider his struggles with the world—his everlasting race with the busy competition of trade. What is it makes him so eager in the pursuit of gain—so energetic by day, so sleepless by night—but his love of home, wife, and children, and a dread that their respectability, according to the light in which he has conceived it, may be encroached upon by the strife of existence? This is the true secret of that silent care which preys upon the hearts of many men; and true it is that when love is least apparent, it is nevertheless the active principle which animates the heart, though fears and disappointments make up a cloud which obscures the warmer element.

MISCELLANY.

POTATO TRAP TO CATCH WIRE WORMS, SO DESTRUCTIVE TO THE ROOT OF THE HOP.—Cut turnips in slices, and potatoes in two, bury them in the ground, and examine and replace daily. By this means many of these insects may be destroyed, as they will leave the roots of the hops to regale themselves on these esculents.

POTATO BENEVOLENCE.

In deeds of charity thy soul delights ;
In mercy, justice, and in human rights ;
Thy liberal heart deviseth liberal things ;
Thy hand o'er every path some sunbeam flings ;
The poor look up with blessings on thy face ;
The children rush to meet thy kind embrace ;
The weak appeal to thee for just redress ;
The sorrowing throng thy path to praise and
bless ;

And all, of every station, age, and race,
Implore thy favour and extol thy grace.

WEIGHT OF CATTLE.—The following is the rule :—Weight may be estimated by measurement, as follows :—The girth is to be taken where it is smallest, squarely round the body, immediately behind the shoulder ; the length, from the front of the shoulder to the insertion of the tail. Multiply the square of the girth in feet and inches with the length in feet and inches, and the product by '24, '26, '28, '30, according to the fatness of the animal. The result will be the weight of the carcass in imperial stones. The weight of the carcass is to the live weight of an animal as 1 to 2, or a little more than 1 to 2 in cattle ; as 8 to 14 or thereabouts in fat sheep ; as 2 to 3 in the case of well-fattened pigs.

CHEAP FOOD FOR HORSES.—A proposition has been made to the French Minister of War by M. Longchamp to try a new method of feeding horses, which he asserts will produce a vast saving in the amount of forage necessary

for the army. This gentleman proposes to make a sort of bread, three-fourths potatoes and the rest oatmeal, with which the horses are to be fed in place of oats. The average quantity of oats for a horse per day M. Longchamp estimates to be 10 lb., costing about 13 sous. He proposes to replace this food by 10 lb. of the bread made with oats and potatoes, the price of which will be only 5 sous, leaving a saving of 8 sous a day.

POWDERS FOR COLDS IN HORSES AND COWS.—8 oz. black antimony, 4 oz. nitre, 4 oz. best ground ginger, all to be mixed together, and made into 12 powders, $\frac{1}{2}$ oz. in each. One powder to be given every other evening in a warm mash of bran. The animal to be kept warm. This improves their coat, and three or four of them invariably effect a complete cure. These powders are an excellent remedy for stomach ailments in swine.—*By David Campbell, M.R.C.V.S., London.*

HOW TO DRAW BLOOD.—The operation of bleeding is generally performed in the horse and ox by opening the jugular vein, which runs along the hollow in the neck, above the windpipe ; either fleam or lancet may be used. Sheep are bled by opening, with a lancet, the vein at the inner canthus of the eye, about two inches from the corner of the orbit. The vein inside the knee, or inside the thigh, may be punctured instead. Pigs may be bled in the two last-named places, or by puncturing the roof of the mouth a short distance behind the corner teeth. The pulse may be felt in the horse at the edge of the lower jaw, where the submaxillary artery crosses the bone ; in the ox, by placing the fingers between the dew-claws of the fore legs ; in sheep, pigs, and small animals of any kind, by placing the hand firmly over the region of the heart, immediately behind the elbow on the left side.

DURATION OF PREGNANCY IN DOMESTIC ANIMALS.—On the duration of pregnancy, and the periods of premature and protracted labour, Baumeister furnishes the following table :—

Species.	Premature Labour.	Regular Labour.	Protracted Labour.
Mare,.....	11 mths., or 330 days.	11½ mths., or 340 days.	14 mths., or 420 days.
Cow,	8 mths., or 240 days.	9½ mths., or 285 days.	11 mths., or 330 days.
Sheep and Goat,	4½ mths., or 135 days.	4½ mths., or 144 days.	5½ mths., or 160 days.
Sow,	3½ mths., or 110 days.	4 mths., or 120 days.	4½ mths., or 130 days.
Bitch,	1½ mths., or 55 days.	2 mths., or 60 days.	2½ mths., or 70 days.
Cat,	1½ mths., or 50 days.	1½ mths., or 55 days.	2 mths., or 60 days.

ONE THING AND ANOTHER.

WAX FLOWERS.—The following articles should be laid upon the table before commencing:—A penknife, a pair of scissors, two pieces of thickish wire, two sizes, a long brass pin, with a knot or round head of sealing wax, or a pin with a round bone top, three or four smooth and slender pods of wood, a few sheets of wax of different colours, and some wire of different sizes, covered with green tissue paper, for stems, and some very thin tin or brass, or even stiff paper, to cut up into shapes; also some green wax in a melted state, and a large basin with hot water and with a flat cover, so that the wax sheet can be placed on it, in order to be kept for moulding.

For the first attempt, choose a very simple flower, such as a primrose, whose petals or flower leaves are few in number, having five centre stamens, being supported by a green calyx or flower-cup. Take the blossoms to pieces, without injuring any part of it, and make the petals perfectly flat by placing them under a smoothing iron, between paper; then cut out patterns as near as possible to the original, or your work will be spoiled. The tin or paper patterns must then be laid upon the wax, and the five petals and the green calyx cut from them; then take one of the pieces of wire that nearest resembles the stalk of the primrose, dip it in the green melted wax, and when cold fix on, by the pressure of the finger and thumb, fine, thread-like stripes of yellow wax to represent the stamens. These being firmly fixed, fasten on one of the petals in the same manner by pressure, then a third, fourth, and fifth, putting them regularly round and bending them outwards. This done, put the calyx on the warm plate for a short time, in order that it may become soft; then form it to its natural shape round one of the little pods of wood, and thus you will prepare it to be slipped on at the lower end of the stalk of the flower; when it is properly placed, press it tightly against the stem, and the whole will firmly adhere together. A few touches of darker yellow will be required near the centre of the petals. This may be given in oil colour or water colour, mixed with oxgall. The root leaves are generally made of cambric or wax. If made of cambric, you may dip them into a little warm wax. Various other flowers may be cast in the same manner. When the petals are hollow, as in the tulip, the wax must be softened on the

hand or the hot plate till it is quite pliable, and the centre part is generally rolled with the sealing wax out of the pin. This expands the wax, and forms it in the hollow of the hand to the required shape. Sometimes the petals are wrinkled, as in the red poppy, &c., and in order to imitate this appearance the wax must be well warmed and well rolled. It is then cut to the shape and crumpled up by the hand. If this is cleverly done, the wax petals on being opened will very nearly represent the particular appearance of the part it is intended to represent. The best way to make a convolvulus is to pour some plaster of Paris carefully into a natural flower, and thus get an exact mould on which to form the wax copy. A piece of wax is then cut out to the same shape and size as the flower (which has been cut open and flattened), and form carefully round the mould, uniting the join at a part of the blossom where it will be least observed. The coloured stripes which adorn the inside of the flower are also made of plaster of Paris, and the block may be fashioned to mould leaves in the way I have above described. Flowers whose tints are delicately blended can only be imitated by forming the petals of white wax, and then tinting them powder colours, painted on with a short-haired brush. In this way all kinds of flowers can be represented. It is necessary to be very careful in putting the number of stems and pistils correctly, as otherwise the character of the flower would be destroyed. The ends may be dipped in gum water, and afterwards in powder of the colour required. If all the above rules are strictly attended to, a little practice is all that is required.

CUT FLOWERS.—If cut flowers, received from a distance, or from any other cause, are drooping or fading, to freshen them, dip their ends in boiling water and let them remain till the water becomes cold. Then cut off the end that has been dipped, and arrange the flowers in the vase tazza. A mixture of sand and water is much better for arranging and supporting flowers than water. The end of the stems of cut flowers, when they begin to droop, should receive two or three drops of the spirit of hartshorn. Flowers will remain longer fresh under a glass shade than if exposed to the air.

FLOWERS—HOW TO EXTRACT THEIR ESSENCE.

—Take the petals of any scented flowers, and dip thin layers of cotton wool into fine Florence oil; sprinkle a little salt on the petals, and place layers of oiled cotton and flowers alternately in an earthenware or glass vessel until it is quite full. Tie it tight over the top with bladder, and allow it to remain for twelve days, and set in a place where there is moderate heat. When opened, by pressure of the mass, a highly flavoured oil may be obtained.

THE PODS OF PEAS.—The pods of peas are commonly thrown away as refuse after shelling, or used only for feeding cattle or pigs; but when young and tender they are an excellent vegetable, very fit for being used in soups. There is a kind of pea called the Sugar Pea, the pods of which have only a thin pellicle as an internal lining, instead of the hard lining found in other kinds, and peas of this kind are boiled in the pod and used like kidney-beans. The pods of the ordinary garden varieties are, however, of equally delicate flavour, and the only, but insuperable, objection to their use as a boiled vegetable is the hard and unpalatable interior lining. They may, however, be used in soups, being, in the first place, boiled in a separate vessel, until they can be easily rubbed to pieces. This is done by means of a wooden spoon, or similar implement, and the pea shells are then placed in a drainer having wide holes, with the water in which they were boiled, when the eatable part passes through the drainer with the water, and forms an excellent addition to soups. The strings and hard linings of the pods remain upon the drainer. A more simple method is by stripping the pea shells of their wood lining, by breaking each shell longways, and with the finger and thumb strip them of their lining. They can then be boiled with the peas as part of the dish, or otherwise in soups.

ON DRESSMAKING.—As the cut and fashion of dressmaking varies so often that directions given to-day may be of little use to-morrow, no definite directions thereanent can be given. The following remarks may, however, be found useful:—If the material that the dress is to be made of is printed or of a wrought fabric, with both sides not alike, great care and attention is necessary in cutting in order that all parts of the sides and sleeves may not be both for one side. To prevent mistakes, cut them from the cloth with corresponding sides, place together—either right or wrong sides—and if this is attended to you will never have two

alleaves for one arm. Before you commence to cut, have your paper shapes the proper size, and you will have less chance of waste. If the material has a pattern, it should always run upwards, the straight part of it being in front of the body. The goaring of skirts being now so fashionable, they should be cut on the same principle, the even side being to the front width, and the sloped side to the back of the dress. In printed materials, or where both sides are not alike, do not cut one goar out of the other, but fold two widths together, selvagewise, and cut two widths at a time diagonally from the centre.

DECORATION OF HAIR.—This most beautiful gift of Nature is now-a-days so carelessly arranged as to be a complete disfigurement, instead of an embellishment of the female form. Being a particular admirer of a well-kept head of hair, I will, in the first place, draw attention to the most simple and correct mode of disposing and ornamenting the tresses. For this purpose I must make allusion to the ancient Greek women, whose method of arranging the hair presents a striking contrast to all modern innovations of bad taste. This style of coiffure, designated by the French *a la Grecque*, is the most simple and graceful that can adorn the head of a woman. Nothing can be more beauteous in its simplicity than to see the glossy hair parted on the forehead, drawn in a curved line across either side of the temples, afterwards made into a plait, twisted round the back of the head, and sustained by a simple comb. When a more elaborate toilet is required, an additional flow from the back of ringlets, or wreaths of flowers of ivy or vine around the forehead, or twisted strings of pearls around the plait of hair may be adopted. This elegant method alike displays the luxuriance of "Nature's covering" and the formation of the head, neither concealing the shape nor rendering it out of proportion by increasing its natural dimensions. As regards the style in which the tresses are confined, I think a lady is quite justified in following the dictates of her own taste instead of those of extreme fashion; and I unhesitatingly affirm that a female cannot either display better taste or judgment than in arranging her locks with neatness, simplicity, and elegance, and these three essential points are found in the coiffure *a la Grecque*. I often feel vexed that bodkins or pins are not more generally used in this country as ornaments for the hair; and I know not a more simply elegant coiffure than the national one of Ceylon. All the women, high

and low, draw their locks from off their brow, and twist them into a knot at the back of the head. The hair is maintained in form by tortoiseshell, silver, or gold pins. Two of these pins, somewhat of the shape of an arrow, are inserted into the centre of the knot in a transverse direction, and one pin with a flat, semi-circular head is placed on each side of the knot, close to the head. Words will not convey an adequate idea of the exquisite effect produced by this style of ornamenting the head, which is as simple as it is elegant. These pins do not resemble in any degree the bodkins used either by the Russian, Swiss, or Italian peasantry, nor those worn by the Chinese; and not in any part of the globe is there found anything more beautiful. The Chingalese pins are made either of tortoiseshell, lined with silver, or of richly worked gold or silver, the gold pins only being worn in full dress by the wives and daughters of the chiefs. Their value is estimated by the weight of metal, perfection of workmanship, and beauty of gems with which the bodkins are studded. There was one of the chief's wives whose four hair ornaments cost upwards of 3000 dollars. The first thing necessary to preserve the hair is general health of body. If it is in an unhealthy state, there is always a tendency for the hair to come out. The skin of the head must therefore be kept clean. To effect this a brush should be used two or three times a day—morning, noon, and night. When the epidermal scales of the skin of the head accumulate, a mixture of whisky and vinegar, of equal parts, rubbed into the skin by means of a sponge will remove them. This ought to be done before going to bed. The mixture is then washed off in the morning with lukewarm water, and the hair properly dressed. In almost every instance the scales will be removed. Close nightcaps are very injurious. A net is a proper head-dress. If the scurf is allowed to accumulate, the head rubbing against the pillows leaves upon them a portion of this, which, if touched by the face when the pores are excited by the warmth of the bed, will cause absorption of some of the poisonous matter. The result will be pimples of a very disagreeable nature. The ordinary comb is as necessary as the brush. The small-toothed comb is not needed unless vermin exist. They are seldom to be found unless in the heads of children. A slight rubbing of mercury ointment will quite destroy them, but this must be used with caution. Girls under twelve years of age should not wear their hair long. The premature growth before the strength of

the body is developed tends to impair the constitution, and is detrimental to the future growth of the hair. An inch or two may at times be cut off the ends of the hair with advantage. Oils and pomades should be put on in the morning or when dressing for dinner, but do not use them unless absolutely necessary. There are various perfumed unguents, pomades, and oils used for this purpose. I shall give two that I know to be very good. *Hair Oil*.—8 oz. finest olive oil, 60 drops cantharides, 60 drops oil birgamette, 60 drops oil of lemon, 10 drops oil of roses. Put all in a stone jar, with a few chips of alkanit root to colour, and heat it so as to mix it properly. Strain through a piece of muslin, and bottle it for use. *Hair Cold Pomade*.—Put half a pint of oil of benzoin, six ounces of spermaceti, and one of beef marrow, melt all together, colour with alkanit root, filter through when warm, add 60 drops birgamette, 10 drops of oil of roses, or any essential oils you may think proper. When put into pots do not cover up until quite cold.

SUBSTITUTE FOR POTATOES.—For the last four years considerable attention has been paid at the Museum of Natural History, in Paris, to the cultivation of a plant coming from China, and known under the name of *Dioscorea Japonica*. This plant, says the writer of a paper sent to the Central Agricultural Society, may, by its size, weight, and hardy character, become exceedingly valuable in France, as it will serve as a substitute for the potato. Its tubercles, like those of the Jerusalem artichoke, resist in the open air the severest winter without sustaining any injury. Several specimens of these roots, of very large size, were presented in 1852 to the society, one of which, of a cylindrical form, was three feet in length; another tubercle, presented in 1853, weighed three pounds: the former having been in the earth twenty months, and the latter sixteen. The flavour of this vegetable is more delicate than that of the potato.

TO TAKE MARKING INK OUT OF LINENS.—Immerse the linen in a solution of chloride of lime, and then, after a few minutes, in a solution of ammonia, allowing it to remain for a short time. After this, it only requires to be rinsed in clean water.

THE VALUE OF A SCRAP-BOOK.—Everyone who takes a newspaper which he in the least degree appreciates will often regret to see any one number thrown aside for waste paper

which contains some interesting and important articles. A good way to preserve these is by the use of a scrap-book. One who has never been accustomed thus to preserve short articles can hardly estimate the pleasure it affords to sit down and turn over the familiar pages. Here a choice piece of poetry meets the eye, which you remember you were so glad to see in the paper, but which you would long since have lost had it not been for your scrap-book. There is a witty anecdote—it does you good to laugh over it yet, though for the twentieth time. Next is a valuable recipe you had almost forgotten, and which you have found just in time to save much perplexity. There is a sweet little story, the memory of which has cheered and encouraged you many a time when almost ready to despair under the pressure of life's cares and trials. A choice thought is far more precious than a bit of glittering gold. Hoard with care the precious gems, and see at the end of a year what a rich treasure you have accumulated.

A CURE FOR TOOTHACHE.—Steep a piece of coarse brown paper in cold vinegar; then grate ginger upon it, and apply it to the side of the face affected. The application to be made at bed-time, and to be kept on during the whole of the night.

SIMPLE CURE FOR DIARRHOEA.—Three strawberry leaves, eaten green, are said to be an unfailing and immediate cure for summer complaints, diarrhoea and dysentery.

TO CURE A SOFT CORN WHEN BETWEEN THE TOES.—A small piece of cotton wool applied fresh every morning, gives no inconvenience, is cleanly and efficacious. This simple remedy has proved a very great relief to many.

CURE FOR HOOPING COUGH.—Carbonate of potass one drachm, cochineal one scruple, boiling water eight ounces. The dose is a tea-spoonful three times a day.

SCURVY OF THE GUMS.—Tincture of myrrh, four drachms; Peruvian bark, two drachms; burned alum, two scruples; French boll, two scruples; water, 6 oz. Mix, and wash the gums well every morning.

BRUISES.—Bathe with spirit, as brandy, mixed with an equal proportion of vinegar and water. Leeches or continual ice will prevent inflammation. So will extremely hot water if applied immediately for an hour.

REMEDY FOR SORE THROAT.—Those who are subject to sore throat, &c., should bathe the throat with cold water in the morning, and use a flesh brush at night.

REMEDY FOR A COUGH.—Syrup of squills, syrup of white poppies, syrup of horehound, and clarified honey. Equal parts of each. A tea-spoonful of the mixture should be taken at night, in a wine-glassful of warm water, and in the morning also, if the cough is very troublesome; but in ordinary cases it will probably be sufficient to take it at night.

AN EXCELLENT DISINFECTANT.—Sulphurous acid—or the fumes of burning sulphur—constitute an excellent disinfectant. We strongly recommend frequent fumigations of dwellings, areas, courtyards, and gardens, simply with the fumes of burning sulphur, as a very cheap, as well as assuredly effectual disinfectant, of all such noxious miasmata, at least, as are likely to infest the precincts of human dwellings. It may be readily kept burning, even in the coldest weather, by help of a red-hot poker. Care should be taken to prevent children from coming in contact with it.

VOMITING, in case of poison, may often be induced by tickling the swallow with a feather, or with the point of the finger.

SPRAINS.—Keep the joint perfectly at rest. If one of the joints of the leg be injured, let the person keep upon a bed or sofa. Apply warm moist flannels to the injured part, or a large poultice of bread and water. If the pain be very considerable, a few leeches should be applied. Above all else, avoid motion of the joint.

FRACTURES.—These accidents are often made more serious by injudicious awkward movements of the parts before surgical assistance is procured. If either of the bones of the arm be broken, it is best to put the fore-arm at a right angle with the upper, and support it so by a sling that reaches from the elbow to the finger-ends. If the injury happen to one of the bones of the leg, the body should be kept in a horizontal position, the injured limb being placed as nearly as possible in its natural state in regard to length, and being firmly tied to the sound limb, if the person have to be moved. If moving be necessary, it is better that the patient be carried by hand on a shutter or board, rather than ride in a carriage of any kind.

CHOLERA.—Under an attack of this disease the patient's feet should be made warm by applying to them heated bricks, or bottles filled with hot water. A large mustard-poultice should be applied over the region of the stomach and belly, and kept on until the skin is very considerably reddened. Cramp of any part of the extremities should be freely rubbed with warm oil. A pill—containing one grain of gum-opium and four grains of calomel—may also, if procurable, be given to an adult, *but not on any account to a child*. Drink, of the simplest kind, should be *most sparingly* administered—a teaspoonful at a time should hardly be exceeded. Spirituous drinks should be avoided altogether.

CURE FOR BEE STINGS.—A writer in the *Gardeners' Magazine* says :—"There are a number of well-known antidotes to the sting of the honey bee ; and were it not for the fact that they are seldom available when required, it would be unnecessary to direct attention to an additional one. But the antidote I am about to recommend is everywhere available, for it is nothing more nor less than an application of common soil to the wound. Towards the end of the spring of this year I had the misfortune to be stung by a bee when in the garden, and as none of the usual antidotes were just then available, I drew the sting from the wound and applied a little common soil, after wetting it sufficiently to admit of its being worked into the consistency of thick cream. The pain previous to the application of the soil was most intense, but in a few seconds afterwards it was reduced to a dull ache ; and nothing more beyond a slight stiffness in the joint of the thumb was felt afterwards. I have had an opportunity

of testing the same remedy since, and with the same degree of success. As the stings of bees and wasps affect some persons more than others, it is proper to remark that hitherto I have suffered most severely, losing in one or two instances the use of my hand for several days, through its swelling to such a large size, and being in the most intense pain.

SHEEP'S HEAD BROTH (SCOTCH).—Procure a sheep's head, neck, and trotters. Have the head and trotters properly singed with a red-hot iron, generally done at a blacksmith's forge. Split the head and take out the brains, and rub the head and trotters all over with it. Let them steep all night in lukewarm water, and next morning scrub and clean them thoroughly. Cut out the worm from between the toes. Put about two gallons of water in a goblet, and about half a pound of pearl barley. When the water boils put in the head, neck, and trotters, and a few carrots and turnips cut down into slices. Add pepper and salt to taste, and let it boil for three or four hours, taking the scum off as it rises. Cover the goblet with a close-fitting cover, and put in some chopped onions and parsley about half an hour before serving. Green peas are a great improvement to this broth, which can easily be had in summer. Boil some whole carrots and turnips, place them round the head, neck, and trotters, and serve up. This is the way they are served to Her Majesty at Balmoral.

Scotch barley broth may be made in the same way, adding cabbages or greens ; and instead of the sheep's head, substitute a fowl, ribs of mutton, beef, &c. All the better when composed of a variety of meats.

A CHINESE PUZZLE.—A Chinaman died, leaving his property by will to his three sons, as follow :—"To Fum-Hum, the eldest, one-half thereof ; to Nu-Pin, his second son, one-third thereof ; and to Ding-Bat, his youngest, one-ninth thereof." When the property was inventoried, it was found to consist of nothing more nor less than seventeen elephants, and it puzzled these three heirs how to divide the property according to the terms of the will without chopping up the seventeen elephants, and thereby seriously impairing their value. Finally, they applied to a wise neighbour, Sum-Punk, for advice. Sum-Punk had an elephant

of his own. He drove it into the yard with the seventeen, and said, "Now, we will suppose that your father left these eighteen elephants. Fum-Hum, take your half and depart." So Fum-Hum took nine elephants, and went his way. "Now, Nu-Pin," said the wise man, "take your third and git." So Nu-Pin took six elephants and travelled. "Now, Ding-Bat," said the wise man, "take your ninth and be gone." So Ding-Bat took two elephants and absquatulated. Then Sum-Punk took his own elephant and drove home again. Query—Was the property divided according to the terms of the will ?

WIT AND HUMOUR.

"When was Rome built?" asked a competitive examiner of a boy. "In the night, Sir." "In the night, Sir! What do you mean?" "Why you know, Sir, Rome was not built in a day."

ANSWERED.—"Tommy, you're a pig," said a father to his little boy. "Now, do you know what a pig is, Tommy?" "Yes, pa; pig's a hog's little boy."

LOOK AT THIS, AND THEN FAINT.—It is said that "Uncle Tom's Cabin" was not written by mortal hands. Of course not, seeing that it was written by Mrs Beecher's *toe*.

"Buy a trunk, Pat?" said a dealer. "And what for should I buy a trunk?" rejoined Pat. "To put your clothes in," was the reply. "And go naked?" exclaimed Pat. "Not a bit of it!"

LANCASHIRE HUMOUR.—Scene at a meeting at Preston.—"Tak thi hat off," said one fellow in the crowd to another in front of him. "What for?" "Why, aw cannot see." "Well," replied the other, "if aw tak my hat off thou'll be worse off than ever. My yare (hair) is thirteen inches long, an' it stons straight up. I've put my hat on to keep it down."

DYEING RED.—"What are you doing there, Jane?" "Why, pa, I'm going to dye my doll's pinafore red." "But what have you to dye it with?" "Beer, pa!" "Beer! Who on earth told you that beer would dye red?" "Why ma said yesterday that it was beer that made your nose so red, and I thought that"—"Here, Susan, take this child to bed!"

A GOOD ONE.—"Paddy, honey, will ye buy my watch now?" "And is it about selling your watch ye are, Mike?" "Troth it is, darlin'!" "What's the price?" "Ten shillings and a mutchkin of the cratur." "Is the watch a dacent one?" "Sure and I've had it twenty years, and it never once desaved me." "Well, here's your tin. Now tell me, does it go well?" "Bedad, an' it goes faster than any watch in Connaught, Munster, Ulster, or Leinster, not barring Dublin?" "Bad luck to ye, Mike, you have taken me in! Didn't ye say it never desaved you?" "Sure, an' I did; nor did it, for I never depended on it."

A WISE NIGGER.—"Dar are," said a sable orator, "two roads in dis world. De one am a broad and narrow road dat leads to perdition, and de udder am a narrer road dat leads to sure destruction." "If dat am the case," said his companion, "dis culled individual takes to de wood."

THE LATE SIR R. PEEL.—During the time the late Sir Robert Peel was Premier, Lady Jane Peel was in the habit of pasting all the articles which appeared in the newspapers against him on a screen. "There is nothing very singular in that," remarked Peel, "it is but the duty of every good wife to screen her husband's faults."

AN ILLUSION DISPELLED.—A lawyer built himself an office in the form of a hexagon, or six-square. The novelty of the structure attracted the attention of some Irishmen who were passing by. They made a full stop, and viewed the building very critically. The lawyer, somewhat disgusted by their curiosity, lifted up the window, put out his head, and addressed them. "What do you stand here for, like a pack of blockheads, gazing at my office? Do you take it for a church?" "Sure," said one of them, "I was thinking so till I saw the devil poke his head out of the windy!"

A Scotchman and an Irishman happened to be journeying together through a most interminable forest, and by some mishap lost their way, and wandered about in a pitiable condition for a while, when they fortunately came across a miserable hovel, which was deserted except by a lone chicken. As this poor biped was the only thing eatable to be obtained, they eagerly despatched and prepared it for supper. When laid before them, Pat concluded that it was insufficient for the support of both himself and Sawney, and therefore a proposition was made to his companion that they should spare the chicken until the next morning, and the one who had the most pleasant dream should have the chicken, which was agreed to. In the morning Sawney told his dream. He thought angels were drawing him up to heaven in a basket, and he was never before so happy. Upon concluding his dream, Pat exclaimed, "Och, sure, and be jabers, I saw ye going, and thought ye wouldn't come back, so I got up and ate the chicken myself."

Archbishop Leighton, returning home one morning, was asked by his sister, "Have you been hearing a sermon?" "I've met a sermon," was the answer. The sermon he had met was a corpse on its way to the grave; the preacher was Death. Greatest of street-preachers!

ANECDOTE OF BOSWELL.—The following anecdote was related by Jeremy Bentham to the late Mr Archibald Prentice, of Manchester. Bentham had dined with a party in London one day, and observing that Boswell had made some excuse to go back to the dining-room when the party were on their way to the drawing-room, and having some suspicion that the excuse was not the real one, he turned back, and wickedly detected Boswell in the act of swallowing glassful after glassful, hastily poured out from the bottoms of the decanters, of sundry varieties of wine that stood on the table, under the influence of which, when he joined the ladies, the biographer of Johnson became so eloquent as, according to his own account, he had ever been, under similar influence, in the presence of the Duchess of Argyll.

LORD ELDON IN HIS CUPS.—One evening, John Clerk—Lord Eldon—had been dipping rather too deeply in the convivial bowl with a friend in Queen Street, and on emerging into the open air, his intellect becoming a considerable degree confused and not being able to distinguish objects with any degree of minuteness or certainty, he thought himself in a fair way of losing the road to his own house in Picardy Place. In this perplexity he espied some one coming towards him, whom he stopped with this query: "D'ye ken whaur John Clerk bides?" "What's the use o' you speerin' that question?" said the man; "you're John Clerk himsel'." "I ken that," answered John; "but it's no himsel' that's wanted—it's his hoose."

AN ANECDOTE OF JEFFREY AND COCKBURN.—In a case in which Jeffrey and Cockburn were engaged as barristers, a question arose as to the sanity of one of the parties concerned. "Is the defendant, in your opinion, perfectly sane?" said Jeffrey, interrogating one of the witnesses, a plain, stupid-looking countryman.

The witness gazed in bewilderment at the questioner, but gave no answer. It was clear

that he did not understand the question. Jeffrey repeated it, uttering the words:

"Do you think the defendant capable of managing his own affairs?"

Still in vain; the witness only stared the harder.

"I ask you again," said Jeffrey, still with his clear English enunciation, "do you consider the man perfectly rational?"

No answer yet, the witness only staring vacantly at the little figure of his interrogator, and exclaiming:

"Eh?"

"Let me take him," said Cockburn. Then, assuming the broadest Scotch tone, and turning to the obtuse witness, "Hae ye your mull wi' ye?"

"Ow ay," said the man, stretching out his snuff-box.

"Noo, hoo lang have ye kent Jam Sampson?" said Cockburn, taking a pinch.

"Ever since he was a babby."

"And d'ye think noo, atween you and me, that there's anything intil the cratur?"

"I would na lippin (trust) him wi' a bull calf," was the instant and brilliant rejoinder.

Cockburn could certainly use the tools needed in a Scotch Jury trial better than Lord Jeffrey, though inferior to him as a lawyer or advocate.

A Frenchman thinks the English language very tough. "Dare is look out," he says, "which is to put out your head and see; and look out, which is to haul in your head, and not for to see: just contraire."

THE FIRST LOCOMOTIVE.—Sandy Gall (better known as "Skoorer") was an Auchmithie fisherman. He was one of the old school, and while a firm believer in mermaids, sea-serpents, and other marine monsters, stood out manfully against all new-fangled notions. He was particularly sceptical of locomotive steam engines, which he denounced as a humbug; but being told they were in actual operation on the Dundee and Newtyle Railway, he walked from Auchmithie to the top of Dundee Law to detect with his own eyes the base deception. Sandy waited till he saw a train from the north rush snorting into the tunnel, when he started home again in a towering passion, and never stopped till he reached his own fireside, where his first exclamation to an enquirer was—"A hanged humbug; it cam', an' it cam', an' it puffed, an' it puffed, but whenever it got sight o' me, it got on twi' a skirl, an' ran intil a hole."

ROBERT BURNS, SCOTLAND'S NATIONAL BARD.

ROBERT BURNS, the national poet of Scotland, was born January 25th 1759, in a small cottage two miles from the town of Ayr. His early life was one of toil and privation, "the unceasing moil of a galley slave," as he himself expressed it. He attended school a mile from home, and what other knowledge he acquired was out of odd volumes borrowed from neighbours. Burns committed the "sin of rhyme" in his sixteenth year. His poetical compositions, distinguished equally by the force of native humour, warmth, and tenderness of passion, and by the glowing touch of a descriptive pencil, will remain a lasting monument of the vigour and versatility of a mind guided only by the light of Nature and the inspiration of native genius. At the age of sixteen Burns became convinced that his poems had some merit, and resolved to print them. This resolution he carried into effect in 1786, by the publication of an edition of 600 copies, printed at Kilmarnock, which only cleared him £20. He received a letter of introduction from Dr Blacklock to a friend in Edinburgh, where he was received with open arms, and welcomed by the rank and fashion of the Scottish metropolis. A second edition of his poems was published, which brought him £500. The poet returned to Ayrshire in 1788, and married Miss Armour. Here Burns spent the remainder of his life. He now led a free and easy life, but ill health and dejection of spirits came upon him, with pecuniary family difficulties, and he succumbed to the pressure. He died at Dumfries on the 21st of July 1796, in the 38th year of his age, leaving a widow with five infant children, and in the hourly expectation of a sixth. Immediately after his death all Scotland became touched with remorse at having suffered her greatest son to perish in poverty and neglect. Actuated by the regard which is due to the shade of such a genius, his remains were interred on Monday the 25th July 1796, in the churchyard at Dumfries, with military honours, and every suitable mark of respect. The whole ceremony was a grand and affecting spectacle, and well accorded with the general regret for the loss of a man whose like we may never see again.

The face of the poet has been seen twice since the day of his burial. The removal of the body in 1815 gave an opportunity for again beholding the aspect of the dead bard. The

features were then easily recognised; and old friends traced, even in the marble stillness of the sleeper, the yet expressive outlines of his countenance. Another nineteen years passed away; and then the body of Mrs Burns was placed near the remains of her husband. The phrenologists could not resist the temptation to illustrate their science by a full examination of such a poet's head. The cranium was actually taken from the coffin, all the marks carefully noted, and the results were drawn up by the enthusiastic Mr George Combe himself. A cast of the skull was also taken, after which the cranium, being enclosed in lead, was replaced in the grave.

In the year 1789, before Burns's reputation as a poet had gone abroad, he and some companions were enjoying themselves in a roadside public house, whither, by accident, a person named Andrew Horner, who fancied himself a great poet, having written a great deal, happened to stop on his way to Edinburgh, to find a publisher for his verses. In the course of conversation, being rather overcome by the fumes of the toddy, he explained the reason of his journey "to the great city," when one of the company made a wager with him that he would find a man in the room who could compose a better verse in a given time than he could. Andrew, being rather confident in his muse, took the wager—the time being some five or ten minutes—and commenced—

"In the year seventeen hunner and eighty-nine,"

but was not able to get any further until the time had expired, and Burns was called upon to try his poetic skill. "I wunna alter the first line," said he, "but continue on—

"In the year seventeen hunner and eighty-nine,

The deil gat stuff to mak' a swine,

And put it in a corner;

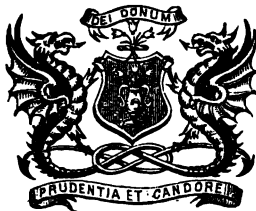
But afterwards he changed his plan,

And form'd it something like a man,

And ca'd it Andrew Horner."

Andrew was so much dispirited at his own defeat and the witty genius of Burns, that he threw all his verses into the fire, swearing he would never write another, but be content to attend to his farm, and let poetry alone for the future.

LOCAL NOTES AND NONSENSE.



"**B**ONNIE DUNDEE" is a flourishing Burgh in Forfarshire. It is situated on the Firth of Tay, and has upwards of 120,000 inhabitants. The principal manufacture was for a long period osnaburghs and other linens, but for a considerable number of years it has been the chief seat of the Jute trade, which employs a large number of the population. About 100 years ago Dundee was in its infancy. Coals were then cheap, and steam only heard of in our tea kettles. As for Jute Lords they were a scarce commodity. In those primitive days, one Robbie Johnston was Provost of Dundee. One day a boy was sent to tell him that he was wanted to attend a meeting. The boy delivered his message to the Provost's wife, on which the good lady replied, "The Provost, laddie, is up at the Whin-hill gatherin' sticks an' sods; ye'll juist hae to gang awa' an' get him, an' tell him he is wanted to attend a meetin' o' Toon Council." The Provost, on getting the message, returned with the boy, carrying the sticks and sods in a sack on his magisterial back. When he got home he was covered with perspiration. Taking out his napkin, and wiping his face, he said to his wife, "Lass, I'll need my wig the day." "Your wig," replied the goodwife, "wha ever heard o' the like? Did you no ken the hen was layin' intil't!"

WILLIE HARRA.—The Harra Family were well-known characters in Dundee thirty years ago. They followed the trade of carters. Willie, the head and pride of the family, tried one of his horses "from the country" with a feed of sawdust instead of bran, and when the poor animal refused to partake of the sumptuous repast, Willie exclaimed—"Wha wad thocht an ignorant country brute like you would 'a kent the difference!"

A PRINTER'S ERROR.—During the great revival at St Peter's, Dundee, in 1840, a tract was circulated with the title, "We shall all be changed in the twinkling of an eye;" but by a strange mistake the first letter of the word "changed" was omitted, making the title, "We shall all be *hanged* in the twinkling of an eye."

JOSEPH DEMPSTER.—The town bellman of Dundee, 32 years ago, was a droll character. On the conflagration of the town churches on the first Sabbath of 1841, Joseph was requested by one of the burned out ministers to go round with the bell and announce arrangements for public worship. "I'm sure you've gotten your prayers answered this day," said Joseph. "I've often heard you wish for 'a wa' o' fire round your Zion,' but you've gotten as muckle as please ye for ae week at onyrate." On another occasion, being bantered by the Rev. Mr Todd, of St David's Church, Joseph replied, "Ou aye, I've heard you preaching about Balaam's ass, but I'll wager, wi' a' your Bible knowledge, you couldna tell me what Abraham's coo said when he gaed a poke wi' his staff." "No, I could not, Joseph, and I don't think you could either, if it had to be told." "Hut awa, man, it just cried 'boo,' like ony ither coo." Joseph, having one day sprained his ankle on the High Street, the late Dr Crichton happened to pass, and was called

on for his advice. The Doctor, knowing his humour, and wishing to frighten him, said he feared the leg would require to be taken off. "Weel, weel," replied Joseph, "in that case *I'll rin the lighter.*"

The Scrymgeours of Dudhope are said to have been descended from a Sir Alexander Carron, who saved the life of Alexander III. when attacked by rebels at his castle of Invergowrie. For this he had his name changed to Scrymgeour, which means "a sharp fighter." The Scrymgeours were afterwards hereditary standard bearers of Scotland, and Constables of Dundee. Dudhope Castle, the abode of the Scrymgeours, and in later times the abode of Graham of Claverhouse, is now the Dundee Barracks.

WILLIE HARRA.—The Harra family were well-known characters in Dundee 30 years ago. They followed the trade of carters, and used to have the honour of owning horses which would have put "the living skeleton" to the blush. Willie, the head and pride of the family, was a sort of lack-wit, of whom many stories have been told. He tried one of his horses "from the country" with a feed of saw-dust instead of bran, and when the poor animal refused to partake of the sumptuous repast, Willie exclaimed, "Wha wad thocht an ignorant country brute like you would 'a kent the difference!"



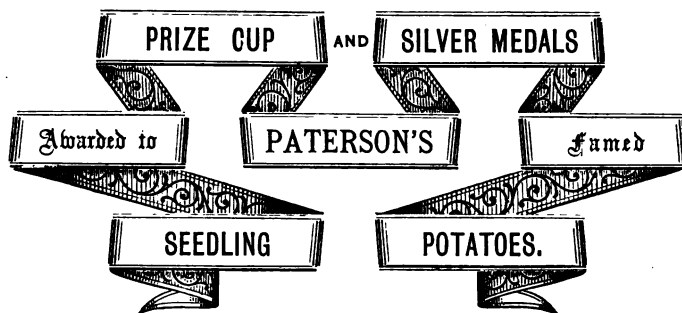
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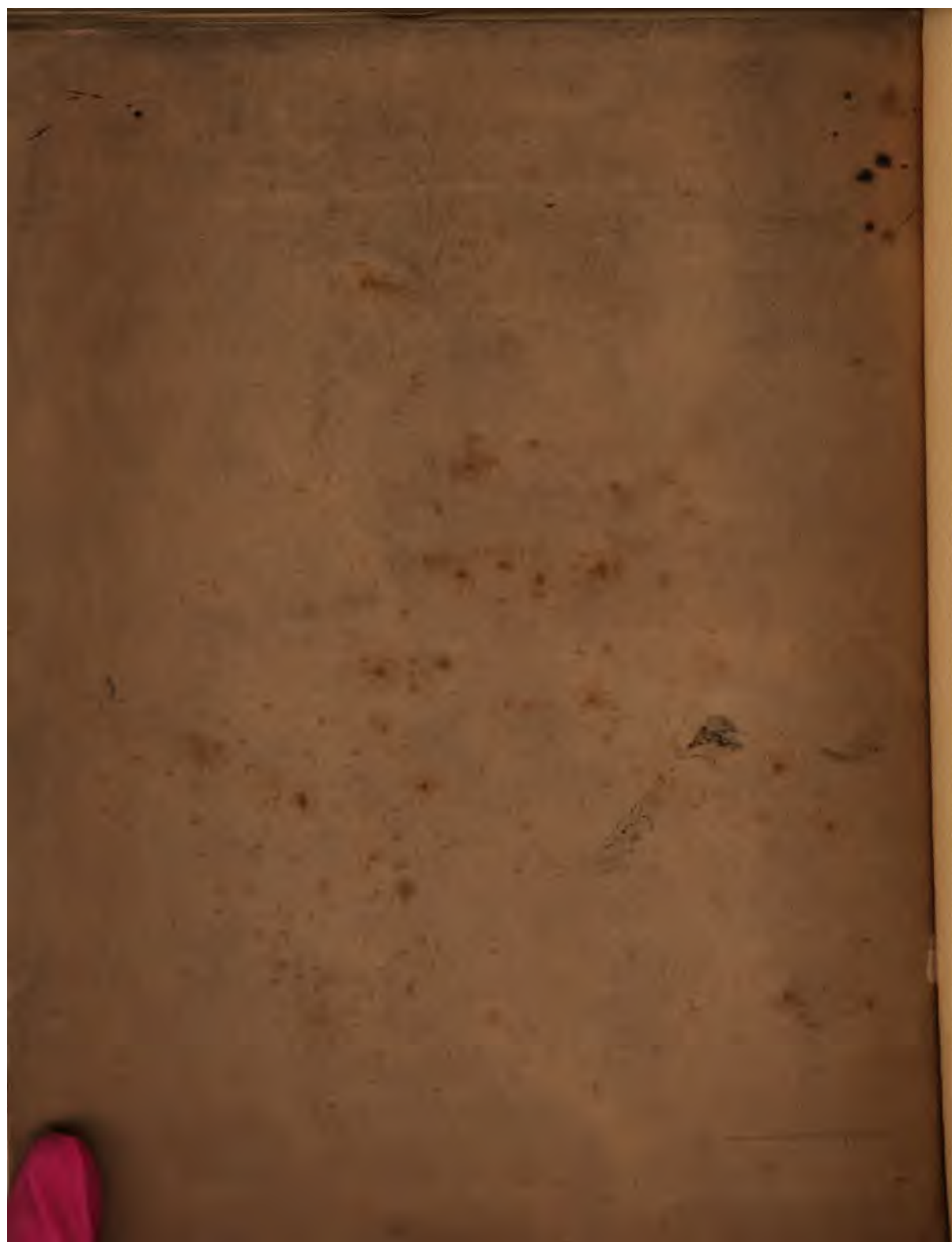
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